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AN INVESTIGATION OF INTEGRATED WEAPON SYSTEM
MANAGEMENT IMPLEMENTATION ISSUES

THESIS

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AFIT/GSM/LSY/92S-6

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AN INVESTIGATION OF INTEGRATED WEAPON SYSTEM MANAGEMENT

IMPLEMENTATION ISSUES

THESIS

Presented to the Faculty of the School of Logistics and Acquisition

Management of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the

Requirements for the Degree of

Master of Science in Systems Management

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Preface

The objectives of this thesis were to capture the experiences of four diverse USAF weapon system programs and identify peculiar problems that were encountered as they implemented Integrated Weapon System Management. It is hoped that this research effort will contribute to the continuing process of merging the cultures of Air Force Logistics Command and Air Force Systems Command as the new culture of Air Force Material Command (AFMC) evolves.

Our sponsor, Mr Anthony Pansza, chairman of the IWSM Implementation Plans Working Group, and his staff provided invaluable assistance through early conceptual discussions and through his help in obtaining support from the pilot programs. Additional assistance was provided by Capt Rick Goddard and Capt John Thompson of the AFMC headquarters.

We wish to thank all of those who shared their IWSM experiences with us. Due to the promise of anonymity, we cannot thank them by name, but the cooperation and enthusiasm of many of the participants enhanced the quality of our data. We are also indebted to our advisors, Maj Kevin Grant and Capt Norah Hill, who provided insight as we developed the approach and structure of our thesis while allowing us the flexibility to make this thesis a product of our own. Finally, a special thanks to Alyce Dalrymple for her patience and support. An added thanks to Andrew and Brianna Dalrymple for enduring their often absent father during the writing of this thesis.

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Scott Dalrymple

Les Pietraszuk

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Abstract

This thesis investigated Integrated Weapon System Management implementation issues.. Five functional areas were examined: Contracting, Engineering, Financial Management, Program Management, and Test Management. Data was collected through interviews.

The most significant lessons learned were to establish a direct chain of command and to use TQM principles. Program business practices were changed by increasing Product Center/ALC interaction and implementing a single joint CCB. Program personnel obtained useful guidance from other IWSM programs and from the information products distributed by HQ AFMC. Communication improvements included increased teleconference capability and establishment of a Local Area Network. Cultural differences between centers, insufficient initial guidance, and "rice bowl" mentalities were the most significant hurdles encountered. An examination of specific functional areas revealed that: contracting officers may expect opportunities to improve contract management; financial managers need to provide increased funding visibility to the single manager; and program managers should expect to change their approach to system life-cycle management.

AN INVESTIGATION OF INTEGRATED WEAPON SYSTEM MANAGEMENT IMPLEMENTATION ISSUES

I. Research Objective

Introduction

The United States Air Force (USAF) is presently undergoing many significant organizational changes. One of these changes is the merger of the Air Force Systems Command (AFSC) and the Air Force Logistics Command (AFLC), creating the new Air Force Materiel Command (AFMC). This merger triggered a new approach to the life-cycle management of USAF weapon systems - Integrated Weapon System Management (IWSM). IWSM is based upon a "single manager" philosophy of weapon system management that places the responsibility for research, development, production, deployment, and operational sustainment of the system under one management position.

Background

Rather than implementing IWSM across the board (approximately 450 programs) simultaneously, the command leadership decided to implement IWSM incrementally, beginning the transition to IWSM with a small number of programs (21). During this experimental phase, Process Action Teams (PATs), composed of experienced functional specialists, learned from the experiences of these programs to develop new ways of doing business for each of the functional areas. Additionally, a Process Integration Team (PIT) was organized to help incorporate these new processes back into

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the 21 pilot program offices. Upon completion of the initial phase, the new processes and implementation guidance will be provided to future IWSM implementors through an IWSM Implementation Guide. The development of the IWSM Implementation Guide is the responsibility of the IWSM Implementation Plans Working Group (IPWG). "The guide will contain the sub-processes identified by the core PATs/PIT that are completed and critical for the follow-on programs to use in streamlining their core processes" (Roadmap II, 1991).

The IPWG chairman has requested that parallel research be performed to complement the development of the IWSM Implementation Guide. The research should focus on capturing and analyzing the experiences of the 21 pilot programs for use in updates to the guide.

Objective

The objective of this study is to provide an independent, in-depth assessment of how IWSM was implemented by a sample of four of the 21 pilot programs. This assessment will investigate the pilot programs' experiences to:

1. identify lessons learned from the transition,

2. identify changes to business practices,

3. identify sources of useful guidance and expertise,

4. identify necessary communication improvements,

5. identify major hurdles which were encountered, and

6. identify issues unique to specific functional areas.

Scope. This exploratory study was conducted in parallel with the development of the IWSM Implementation Guide by the IPWG. The research was not limited by the scope of the guide development. The study

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focuses on implementation issues of selected programs in contrast to the process development issues. Process development issues are addressed only as they pertain to implementation. This research will provide an objective study for the IPWG Chairman to use in his assessment of how the above listed issues may be incorporated into the Implementation Guide. This study is not intended to result in a separate implementation guide, but to identify and analyze issues that may be useful to the guide developers. In addition, this study is intended to provide insight and guidance to Air Force programs starting or continuing their IWSM transition.

Overview

The remainder of this thesis will present a review of the applicable literature, describe the methodology used, discuss the results of four case studies, and propose recommendations and conclusions. The literature review will investigate current research on corporate mergers and acquisitions, the historical aspects of Air Force weapon system management, current IWSM merger issues, as well as how corporate merger models relate to IWSM. The methodology description will address the method of research, the population and sample, the research instrument development, the data collection plan, and the data analysis approach. The results chapter will include an examination of the data obtained from the structured interviews conducted with each of the four sampled pilot programs. The final chapter will include conclusions drawn from the research as well as recommendations for

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programs implementing IWSM and for Headquarters AFMC. Appendix A
provides a list of definitions of words, acronyms, and names which are
used throughout this thesis.

II. Literature Review

General Issue

Today's dynamic economic environment has altered the methods organizations use to survive. Many organizations resort to reducing, enlarging, or merging in order to continue their operations.

The military environment is no exception. Changing global and political arenas, coupled with reduced budgets and smaller appropriations from Congress, have required the military to streamline its operations.

The United States Air Force has initiated its own streamlining by integrating the Air Force Logistics Command with the Air Force Systems Command to form the new Air Force Materiel Command ("Organizations," 1991:71-72). An outgrowth of this merger has been the adoption of a new management approach for weapon systems - Integrated Weapon System Management. IWSM has become the cornerstone to the new command's management approach (Searock, 1991:4).

Corporate Mergers and Acquisitions

Much of the recent research in the area of corporate mergers and acquisition focuses on the financial aspects of the transition (Datta and Yu, 1991:47-60). Due to the different financial natures of private corporate organizations (profit) and the Department of Defense (non-profit), this study will not attempt to seek parallels in financial approaches to organizational mergers. Instead, this section will review research regarding the organizational transition aspects of such mergers.

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Recent research in the area of corporate mergers and acquisitions has resulted in the development of a variety of models to describe different characteristics of organizational transition. For example, some models focus on the transition process. These models may describe a strategic decision-making process (Hitt and Tyler, 1991:327-351; Schniederjans and Fowler, 1989:333-345) or describe the corporate transition process as a series of psychological stages (Scescke Slama, 1991). Analogy is another approach used in developing corporate transition models. One such model relates the organization to a modern integrated information system (Daniell, 1990: 81-86). Finally, attributes of the involved firms are used by some models to identify target firms for acquisition or merger (Rao *et al*, 1991:331-349) or to select the appropriate synthesis mode (Peluchette and Ramaprasad, 1990). The model most applicable to describe the factors involved in IWSM is the Organizational Synthesis model developed by Peluchette and Ramaprasad. The advantage of this model is its use of factors which readily translate to IWSM organizational characteristics at two levels: the command level (AFSC, AFLC) and the program level.

Organizational Synthesis Model. This model was presented at the 1990 National Decision Sciences Institute meeting by Peluchette and Ramaprasad. It incorporates aspects of numerous research efforts into a model of "organizational synthesis." This model proposes four modes of organizational synthesis and six factors which influence the selection of the mode (see Figure 1). The following provides a brief explanation of both the modes and their influencing factors.

Modes. Based upon work by Malekzadeh and Nahavandi (1988), Peluchette and Ramaprasad propose that the merger of two organizations,

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┌─────────────────────────────────────────────────────────────┐
│                                                               │
│  Influencing Factors                    Synthesis Modes       │
│                                                               │
│  Relative Size of Organizations  ┐                            │
│  Nature of the Acquisition       │      Integration           │
│  Relatedness                     │      Assimilation          │
│  Labor Agreements                ├──>   Separation            │
│  Relative Stages of Org Life Cycle│     Disintegration        │
│  Relative Geographic Location    │                            │
│  Acquisition History             ┘                            │
│                                                               │
└─────────────────────────────────────────────────────────────┘
```

Figure 1. Organizational Synthesis Model (Peluchette
and Ramaprasad, 1990:9)

or the acquisition of one organization by another, may be characterized

by one of the following modes:

a. Integration. "A new entity is created, attempting to reflect
the most desirable qualities of both firms" (Peluchette and
Ramaprasad, 1990:10).

b. Assimilation. "The acquiring firm dominates every aspect of
the target company, basically 'swallowing it up'" (Peluchette and
Ramaprasad, 1990:10).

c. Separation. "Although the acquiring firm has some element of
control, usually in terms of accounting or reporting systems, the
acquired firm is left essentially as it was before the
acquisition" (Peluchette and Ramaprasad, 1990:10).

d. Disintegration. "The acquired firm does not remain an
identifiable entity in any form. This may happen, for example,
when an organization is acquired for the value of its real estate
holdings and not for its human or material resources" (Peluchette
and Ramaprasad, 1990:10-11). Malekzadeh and Nahavandi classify
this category as Deculturation (Malekzadeh and Nahavandi,
1990:57).

Influencing Factors. Peluchette and Ramaprasad assert that

every merger or acquisition will be unique so application of these

factors will vary. They suggest that "acquisition decision makers must,

first, be aware of the impact of the influencing factors and then

determine their relative importance so that an appropriate synthesis

mode may be selected" (Peluchette and Ramaprasad, 1990:11). Power

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proposed the following influencing factors based on a study of 42 firms (Power, 1983:63-64).

Size. Size refers to both the relative and absolute measure of number of employees in each organization. As displayed in Figure 2, the model suggests that different synthesis modes are applicable to mergers involving firms of different sizes.

Nature of Acquisition. The Nature of Acquisition refers to the degree of cooperation involved in the acquisition. This degree of cooperation ranges from a rescue, which is the most cooperative nature, to a raid, which is the least cooperative. Figure 3 displays how the combination of the nature of acquisition and the mode of synthesis can impact the resulting work environment.

Relatedness. Relatedness refers to the degree to which the two organizations are alike. This factor includes such issues as technologies, workforces, and existing factories. As Figure 4 displays, the model suggests that the applicability of each of the

| | | Acquiring Firm | |
		Large	Small
Acquired Firm	Large	Integration Disintegration	Disintegration Assimilation
	Small	Separation Assimilation	Integration Separation

Figure 2. Organizational Size vs Synthesis Mode Matrix
(Peluchette and Ramaprasad, 1990:12)

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		Mode of Synthesis			
		Integration	Assimilation	Separation	Disintegration
Nature of Acqui- sition	Rescue	Rebellion/ Submission	Rebellion/ Submission	Independence/ Mistrust	Mistrust/ Withdrawal
	Collabor- ation	Collaboration	Collaboration	Pluralism/ Independence	Mistrust/ Withdrawal
	Contested	Resistance/ Rejection/ Sabotage	Resistance/ Rejection/ Sabotage	Resignation/ Independence	Rejection
	Raid	Rejection/ Sabotage	Rejection/ Sabotage	Mistrust/ Withdrawal	Rejection/ Hostility

Figure 3. Relationship Between Nature of Acquisition and Synthesis Mode (Peluchette and Ramaprasad, 1990:14)

integration modes (integration, assimilation, separation) lies on a spectrum dependent upon the degree of relatedness between the firms.

Labor Agreements. The firm's management of existing labor agreements (especially unions) may affect the selection of a synthesis mode. Figure 5 displays approaches to managing labor agreements based upon the synthesis mode chosen.

Stage of Corporate Life Cycle. This factor refers to the stage at which each firm exists in its growth strategy. If the acquiring firm tries to impose a growth strategy on a target firm that is in an incompatible stage, problems may arise in the two being able to function together. The model identifies four stages of corporate growth: Stage 1 - low efficiency/high effectiveness; Stage 2 - high

```
Very                                              Very
Related <--------------------------------> Unrelated
Firms                                             Firms
        Integration----Assimilation---Separation

                Applicability Spectrum
```

Figure 4. Relationship Between Relatedness and Organizational Synthesis Modes

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Synthesis Mode	Labor Approach
Integration	Accept Current Agreement
Assimilation	Renegotiate Agreement
Separation	Renegotiate Agreement

Figure 5.   Relationship Between Labor Agreements and Synthesis Mode

efficiency/high effectiveness; Stage 3 - high efficiency/low effectiveness; and Stage 4 - low efficiency/low effectiveness. The model suggests that the Integration mode is most applicable when two firms are in the same stage. Figure 6 displays the synthesis mode choices recommended when the two firms are not in the same stage.

Geographic Location. This factor refers to the impacts on the merger due to the differences in the firms' geographic location. The model suggests that the further apart the two firms are geographically, the more difficult the integration mode becomes to implement. One common difficulty which is experienced when trying to integrate two distant firms is choosing the location for the headquarters.

Acquisition History. Acquisition history refers to the firms' experience with previous mergers and acquisitions. The model suggests that greater experience in this area is a good predictor of success in choosing the appropriate synthesis mode. (Peluchette and Ramaprasad, 1990:11-19).

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	Firm 1 Stage			
	1	2	3	4
1	Integration	Integration/ Assimilation	Separation	Separation
2	Integration/ Assimilation	Integration	Separation	Separation
3	Separation	Separation	Integration	Integration/ Assimilation
4	Separation	Separation	Integration/ Assimilation	Integration

Firm 2 Stage

Figure 6. Relationship Between Stage of Corporate Growth and Synthesis Mode

Merger Issues. Recent research into mergers and acquisitions has identified some issues of concern to merging organizations. These issues are: the human aspects of transition and facilitation strategies.

Human Aspects of Transition. Firms often neglect to pay enough attention to the effects that an organizational transition will have on workers.

> Acquiring firms tend to overlook the feasibility and costs of an equally important aspect of the acquisition - organizational fit. . . Organizational fit focuses on the human dimension and involves the match between administrative, cultural, and personnel practices for effective integration of the two firms. (Peluchette and Ramaprasad, 1991:3)

This lack of attention to the human dimension of organizational mergers was addressed in a study by Kanter and Seggerman (1986). Their study asked 50 chief executives:

. . . which of 26 factors in an acquisition received their most serious consideration. Of the top 12 factors, only 3 involved human or organizational issues. However, when asked what factors they would have examined if given a second chance at the same deal, 7 of the top 12 factors listed were human and organizational factors. (Peluchette and Ramaprasad, 1990:6-7)

When considering a merger, managers should focus on such human issues as stress, cultural differences, reporting chains, and management styles (Peluchette and Ramaprasad, 1990:8).

Facilitation Strategies. Research has revealed that actions can be taken by the management of merging firms to facilitate the transformation. In a study performed by Loretta Dodgen, four strategies emerged as beneficial to merging organizations: Pre-Acquisition Planning, Change Management, Communications, and Leadership (Dodgen, 1991).

Consistent with Peluchette and Ramaprasad's focus on human aspects, Datta and Yu stress the significance of pre-acquisition planning and suggest that worker concerns be an important part of planning activities (Datta and Yu, 1991:47-60). A study by Stephen Willett addresses change management. He suggests that keeping employees well-informed regarding merger issues, and even seeking their involvement in formation of the change, will increase the likelihood that the change will be perceived as positive by the employees (Willett, 1990). Alok Chakrabarti provides support to the communication component of Dodgen's strategy. His study stressed that intensive communication is critical to achieving a successful merger (Chakrabarti, 1990:259-268). And finally, Barbara Blumenthal, in a study of small firms, stated that in many cases, leaders failed to take decisive action, provide common goals, or resolve conflicts. She concluded that the

leadership from the managers of both merging firms plays a critical role in "unlocking the potential for synergies" (Blumenthal, 1989).

IWSM - Historical Background

Although IWSM is the USAF's first attempt to implement "cradle-to-grave" weapon system management, the concept of managing a weapon system's life cycle under a single manager is not new. Between 1947 and 1961, the USAF's Air Materiel Command (AMC) was responsible for the procurement and support of weapon systems. A weapon system is defined by the USAF as:

> A composite of equipment, skills, and techniques that form an instrument of combat which usually, but not necessarily, has an air vehicle as its major operational element. The complete weapon system includes all related equipment, materials, services and personnel required solely for the operation of the air vehicle or other major element of the system so that the instrument of combat becomes a self sufficient unit of striking power in its intended operational environment. (Termena et al, 1981:128)

Responsibility for a weapon system did not, however, reside with a single manager. The acquisition responsibilities were managed through a project office which relinquished management during the system's production to an Air Materiel Area, the predecessor to the Air Logistics Center (ALC). In fact, the chief of a project office did not have control over production or support funding for the weapon system he managed. Thus, the authority for the entire weapon system did not reside with any one individual (Termena et al, 1981:128-132).

In October of 1956, a committee headed by the Deputy Secretary of Defense recommended that project offices be given responsibility for funding, facilities, components, and supply. This recommendation was rejected based upon "General Rawlings' policy . . . that no single

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organization was to have the total responsibility for a weapon system"
(Termena et al, 1981:130). Responsibility for weapons systems was
further separated in 1961 when the acquisition function was transferred
to the USAF's Air Research and Development Command, which was the
predecessor to AFSC (Termena et al, 1981:128-132). This separation
between the acquisition and support responsibilities for a weapon system
was maintained until the decision to develop IWSM as the management
approach to be used by AFMC.

Current Issues

In response to growing concern over the increasing expense and
complexity of weapons systems, the Packard Commission studied the
Department of Defense's approach to weapon system acquisition. Its
report, released in 1985:

> . . . recommended some fundamental shifts in program management
> responsibilities and a general streamlining of the entire
> acquisition process. The Department of Defense began implementing
> these changes in earnest through the Defense Management Review, or
> DMR. ("Change is Opportunity," 1991:4)

The Defense Management Review (DMR) was initiated in 1989 as a
response to the Packard Commission. The goal of the DMR was to identify
$30 billion in defense savings for the period of Fiscal Years (FY) 1991-
1995. The DMR committee reviewed ideas previously developed by ". . .
various study groups, the DoD Inspector General, Program Budget
Decisions and also the military services themselves. . ." (Elliot,
1991:5).

The DMR committee issued 38 recommendations which were expected to
save approximately $39 billion over five years (Elliot, 1991:5). It was
in response to these recommendations that the decision to merge AFSC and

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AFLC was made. Secretary of the Air Force, Donald B. Rice stated that "Combining the commands will produce long-term savings in the cost of acquiring and supporting weapon systems. . ." (Bond, 1991:26).

Seamless Management. Until July of 1992, the method of program life-cycle management required system development to occur within AFSC and then, upon completion of production and deployment, to undergo a system Program Management Responsibility Transfer (PMRT) to AFLC (Glossary, 1985:62). PMRT created a significant transition or "seam" for managers (Abrams, 1991). This change of decision authority frequently caused a sudden shift in the approach taken to making program decisions, creating confusion for the customer ("Searock," 1991:4).

The creation of Air Force Materiel Command and IWSM was intended to eliminate PMRT, thus removing a "seam" from the management process, and installing a single manager for a system from "cradle-to-grave" (Rowland and McCarty, 1991:84).

Integration Objectives

There are three major objectives of the integration process. They are to provide a "single face to the customer," to establish a "single manager" for each program, and to create a "seamless cradle-to-grave" philosophy for each program (Abrams, 1991).

General Yates outlined the steps necessary to meet these objectives in a briefing he made to the Secretary of the Air Force. These steps include:

- Integrating the work force and infrastructure (talents and capabilities) of the two commands and synergistically employing the strengths of both.

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- Improving the current business practices by providing a completely Integrated Weapon System Management Process utilizing a Cradle-to-Grave philosophy.

- Providing a single face to operational commands that covers all aspects of Integrated Weapon System Management and establishes a clear line of accountability and responsibility that enhances responsiveness. (Yates, 1991)

The USAF leadership also determined that to make IWSM work, it would be necessary to empower ". . . a single manager with maximum authority over the widest range of weapon system program decisions and resources" (Abrams, 1991).

The single manager is now responsible for all business decisions over the entire life-cycle of the weapon system. This includes responsibility for all systems engineering, configuration management, production, support, and funding issues. Additionally, command leadership determined that the single manager should be initially (at the beginning of a system's life-cycle) located at the Product Center and relocated to the Air Logistics Center when the weapon system was mature (Yates, 1991).

The Process

To implement IWSM across the diversity of programs present within the USAF, a synergistic approach was incorporated. Twenty-one pilot programs were selected to encompass the spectrum of all USAF programs that presently exist (Figure 7).

> The programs represent all product lines such as aircraft, space, missiles, electronics, and communications. They cover the full spectrum of program maturity (the B-2 is an infant; the F-111 is an old man). They involve all five air logistics centers and four product divisions. The 21 programs were divided into four groups for a phased start-up . . . .. ("One Face," 1991:12)

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GROUP I                          GROUP II
_____                  _____

GPS                              F - 111
J - STARS                        FPS - 124
B - 1                            E - 3
LIFE SUPPORT                     EW
AGM - 65                         LANTIRN
F - 15


GROUP III                        GROUP IV
_____                  _____

ICBMs                            SCOPE COMMAND
ATE                              IBIDDS
F - 16                           WCCS
B - 2                            CAS
ATF                              CAMS / REMIS
```

Figure 7. IWSM Pilot Programs (Abrams, 1991)

Consistent with Total Quality Management (TQM) principles, these programs were given wide latitude to implement IWSM as each saw fit. They were then required to brief their experiences during scheduled IWSM meetings. These experiences are used to provide IWSM guidance for the remaining USAF programs just starting the IWSM process (Pansza, 1991).

The Steering Committee. The initial IWSM implementation was led by a steering committee. The committee's membership consisted of the vice commanders of AFLC and AFSC, field commanders from AFLC and AFSC, the commander of AFCC, SAF/AQ, and USAF/LG (Roadmap II, 1991). "The Steering Committee is charged with assuring consistent and effective policies, processes, plans, and training requirements are consolidated for AFMC as a result of process development" (Roadmap II, 1991). There were four groups (see Figure 8) reporting to the steering committee:

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1) the 21 pilot programs,

2) the AFMC Process Owners,

3) the IWSM Working Groups, and

4) an Advisory Committee.

Process Action Teams. Each AFMC Process Owner chaired a process-oriented working group called a Process Action Team (PAT). Each PAT was assigned to one of the eight core processes. These core processes were defined as: Program Management, Financial Management, Contracting, Test and Evaluation, Technology Insertion, Logistics, System Engineering, and Requirements. PATs were responsible for evaluating the approaches taken by each of the pilot programs in the appropriate functional area and recommending new business practices or processes. These recommendations, when coordinated, were included in the IWSM

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┌─────────────────────────────────────────────────────────────┐
│              ┌──────────────────────────────┐               │
│              │    IWSM STEERING COMMITTEE    │               │
│              │                              │               │
│              │   AFLC/CV, AFSC/CV, AFCC/CC   │               │
│              │   AFLC/AFSC FIELD COMMANDERS  │               │
│              │      SAF/AQ, USAF/LG          │               │
│              └──────────────────────────────┘               │
│                                                              │
│   ┌─────────┐  ┌──────────────┐  ┌────────┐  ┌───────────┐  │
│   │21 PILOT │  │ AFMC PROCESS │  │IWSM WGs│  │ ADVISORY  │  │
│   │PROGRAMS │  │    OWNERS    │  │        │  │ COMMITTEE │  │
│   └─────────┘  └──────────────┘  └────────┘  └───────────┘  │
│                                                              │
│   - GROUP I       - PATs           - CORPORATE POLICY        │
│   - GROUP II                       - IMPLEMENTATION PLANS     │
│   - GROUP III                      - TRAINING                │
│   - GROUP IV                       - PIT                      │
└─────────────────────────────────────────────────────────────┘
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Figure 8. IWSM Implementation Structure

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Implementation Guide (Roadmap II, 1991). The PATs were viewed as focusing on the theory of the processes (Pansza, 1991). Working in parallel to the PATs was the Process Integration Team (PIT).

Process Integration Team. The Process Integration Team played an important yet less visible role. The PIT was a working group chartered to integrate the process improvement efforts of the PATs in specifically assigned cross-process areas (Roadmap II, 1991). This working group functioned as a "Clearing House" for coordination of new policies or findings published by the PATs. The need for the PIT was established fairly late in the IWSM process based upon the discovered need for increased coordination among PAT actions (Goddard, 1992). The PIT was also responsible for providing recommendations to be included in the IWSM Implementation Guide. The PIT represented the "practitioners," or process implementors of IWSM (Pansza, 1991). Inputs from the PIT, the PATs, and the 21 pilot programs culminated in the development of the IWSM Implementation Guide.

IWSM Timeline

The IWSM transition process for the 21 pilot programs began in January 1991 and was completed on 1 July 1992. The plan had two distinct phases. The first phase was the Concept Development Phase, which began January 1991 and was completed in March 1991. During this phase the precepts for IWSM were defined, the integration objectives were established, and initial guidance for the pilot programs was developed. The second phase was the Process Development Phase. This phase began in April 1991 and was completed in June 1992 (Abrams, 1991). During the Process Development Phase the twenty-one test programs were

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selected and required to adapt the core processes for IWSM (Abrams, 1991).

This timeline served two purposes. First, it defined when the new Air Force Materiel Command would be established, and second, it defined the steps the twenty-one pilot programs would take to begin " . . . a new way of doing business" (Teal, 1991).

The Corporate Model and IWSM

This section addresses relationships between IWSM, the Organizational Synthesis Model and merger issues at a command (AFSC, AFLC, AFMC) level. A discussion comparing the model and issues at a program level will be presented in Chapter V, Conclusions and Recommendations.

At a command level, Figure 2 displays two choices for the merger of two large organizations based upon the Organizational Synthesis Model: integration and disintegration. As stated in the Corporate Mergers and Acquisitions section of this chapter, disintegration involves the dismantling of one of the two organizations. Integration, on the other hand, involves the melding of the two organizations' practices and cultures. The USAF has chosen integration as its mode of synthesis for the merger of AFSC and AFLC. The most notable indicator of the USAF's integration philosophy was a statement made by Secretary of the Air Force Donald Rice:

> I want to emphasize, . . ., this will not be an absorption of either command into the other. In private business terms, this will be a double liquidation with a new company formed from the assets of the current commands. (Materiel Command, 1991:3)

Consistent with the merger issues discussed by Peluchette and Ramaprasad, the approach taken by AFSC and AFLC to implement IWSM addresses the human aspects of the transition. The USAF leadership has identified the human dimension as an important aspect of the merger. Major General Kenneth Meyer, AFSC chief of staff, stated that the ". . . keys to build anything - including AFMC - are attitude and teamwork (Mauger, 1991:3)."

Facilitation strategies, as discussed by Dodgen, were also incorporated into the IWSM implementation approach. In March 1991, a joint executive committee was established by AFSC and AFLC (the Integration Planning Team) to perform the pre-acquisition planning for implementing IWSM (Mauger, 1991:4). As a tool for change management, TQM was used to analyze processes and to obtain working level input during the transition (Stratford, 1991:3). For IWSM, the answer to ensuring open communication involved the creation of an IWSM electronic bulletin board. Once an organization was provided access, the bulletin board provided availability to the most current IWSM documents and guidance. In addition, the bulletin board also provided a convenient means of communication between organizations ("Roadmap II," 1991). Finally, the IWSM Steering Committee (see Figure 8) provided a unified leadership to the IWSM transition and determined to develop synergy between members of the two former commands ("Roadmap II," 1991).

Summary

The integration of AFSC and AFLC is a dramatic and unique undertaking for the USAF. The concept of a "cradle-to-grave, single manager" approach to weapon system management is one USAF response to

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the streamlining recommendations of the Defense Management Review. The phased approach taken by the implementing agencies appears consistent with corporate merger strategies and is designed to reduce risk and allow flexibility in developing a "road map" for the remaining USAF programs to use as guidance.

III. Methodology

Introduction

This thesis uses a case study approach to examine the IWSM transition, and specifically, to provide an assessment of how IWSM has been implemented by the IWSM pilot programs. The chapter justifies the use of the case study, and then discusses the population and sample, the research instrument development, the pre-interview procedure, the data analysis procedure, and limitations to the design.

Case Study Justification

Yin suggests three situations in which the use of a case study approach is appropriate:

". . . [1] when "how" or "why" questions are being posed,

[2] when the investigator has little control over events, and

[3] when the focus is on contemporary phenomenon within some real-life context" (Yin 1984:13).

Additionally, Emory and Cooper suggest that case studies are appropriate:

4. when seeking the full contextual analysis of a limited number of events.

5. when seeking insight for problem solving, evaluation, and strategy (Emory and Cooper, 1991:143).

This IWSM research effort meets all of the above criteria. As stated above, the objective of this study is to explore "how" IWSM is being implemented (Criterion 1). The researchers had no ability to control or manipulate the IWSM environment (Criterion 2). As a contemporary issue,

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IWSM is a new and evolving management approach (Criterion 3). This research involved an in-depth investigation into a select sample of IWSM pilot programs (Criterion 4). Further, the objective is sub-categorized into the following areas: Lessons Learned, Business Practices, Guidance and Expertise, Communication Improvements, Major Hurdles, and Functional Area Unique Issues. These sub-categories are examined to provide insight for program personnel developing their IWSM implementation strategy (Criterion 5).

Population and Sample

Presently there are nearly " . . . 450 programs in the two commands, making it impractical for them all to start (IWSM) on July 1, 1992" (Stratford, 1991:4-5). Of these 450 programs, a sample of 21 pilot programs was chosen to " . . . cut across all product lines (aircraft, space, missile, and electronics programs), cover the full spectrum life cycle and involve all five air logistics centers and four product divisions" (Stratford, 1991:4-5). For this research effort, a sample of four programs was selected from the population of 21 pilot programs.

Selection Process. The sample of four programs was selected based on two sets of criteria. The primary set consists of two dichotomous criteria: 1) whether or not the system performed PMRT prior to the start of IWSM implementation; and, 2) whether or not the program is a major program (see Figure 9). Criterion 1 was selected on the assumption that a system's life-cycle phase may impact the program personnel's approach to implementing IWSM. Criterion 2 was selected because major and non-major programs receive different levels of oversight from command

```
                PMRT              NON-PMRT

                ┌──────────────┬──────────────┐
   MAJOR        │   CASE 1     │    CASE 2    │
                │              │              │
                ├──────────────┼──────────────┤
   NON          │              │              │
   MAJOR        │   CASE 3     │    CASE 4    │
                │              │              │
                └──────────────┴──────────────┘
```

Figure 9. Sample Selection Matrix

headquarters, service headquarters, or congress. An assumption was made

that oversight requirements may also impact program personnel's approach

to implementing IWSM. Added advantages of these criteria are their

clarity and their applicability to all programs. Other criteria which

were considered for use as primary sample criteria included: size,

contract-type, number of contracts, and program maturity. However,

these criteria were not dichotomous and were vulnerable to

misinterpretation. For example, size could refer to budget or program

office size. Program office size could be measured as the number of

government workers or it could include the number of support contractor

employees.

The secondary criteria included special program characteristics

which may be of interest to some USAF programs. Specifically, the

secondary criteria included the following:

- Commodity Programs,

- Joint Service Customer,

- Joint Nation Customer, and

- Foreign Military Sales (FMS) Customer.

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The sample programs were chosen so that each of the secondary criteria was represented by at least one chosen pilot program to obtain as many different IWSM experiences as possible.

Commodity programs were chosen as a sample selection criterion because their transition ". . . was determined to be a major problem area" (Abrams, 1991). A commodity is defined as:

> . . . something that lends itself to management separate from weapons systems because of its nature, its similarity with like items, or the need to invest in infrastructure such as personnel technical expertise, facilities, or equipment in order to manage it. (Abrams, 1991)

Landing gear is an example of a commodity. Landing gears are managed by a single program office and incorporated into numerous weapons systems. There are nine commodity programs in the 21 pilot programs. The five programs in Group IV (see Figure 7) are all commodity programs. Additionally, LANTIRN, Life Support, ATE, and EW are also commodities.

Joint and FMS programs were chosen as sample selection criteria because some USAF programs have customers other than the USAF. These customers fall into three general categories: joint service, joint nation, and FMS. A joint service customer is another US Department of Defense service organization (Army or Navy). These programs are jointly managed with one of the services acting as the lead. A joint nation customer is a foreign nation that participates with the US in the development of a weapon system. The joint nation customer partially funds the program and usually contributes members to the management team. An FMS customer is one that buys a military weapon system from the USAF. The customer pays all costs associated with the systems development and delivery. While FMS, joint service and joint nation programs may encounter the same types of issues that other programs

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confront, it is likely that these programs will also face unique issues. The inclusion of FMS and joint programs facilitates the study of issues unique to these types of programs.

Program Selection. To classify all 21 programs according to the selected criteria, a short questionnaire (see Appendix B) was administered to the program directors of the 21 pilot programs. To promote quick responses from the programs, the questionnaires were administered via Electronic Mail (E-Mail). Eleven responses to the questionnaire were received. These programs were then classified according to the matrix developed in Figure 9. The resulting classification of the eleven responding programs by the primary criteria is displayed in Figure 10.

To finish the selection process, the programs were reviewed and grouped by their secondary criteria. This grouping resulted in.the development of the Sample Selection Criteria Table (see Table 1). This table was then used to select programs based on the primary and secondary criteria. This process resulted in selecting the following programs: F-16, LANTIRN, FPS-124, and Joint-STARS (see Figure 11).

	PMRT	NON-PMRT
MAJOR	F - 15 E - 3 F - 16 AGM - 65	JOINT STARS B - 2
NON MAJOR	LIFE SUPPORT LANTIRN	FPS - 124 EW ATE

Figure 10. Responding Programs

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TABLE 1

SAMPLE SELECTION CRITERIA

PROGRAM	PMRT	MAJ/NON-MAJ	FMS/JOINT	COMMODITY
F-15	YES	MAJOR	FMS	NO
E-3	YES	MAJOR	FMS	NO
F-16	YES	MAJOR	FMS/JOINT	NO
AGM-65	YES	MAJOR	FMS	NO
JOINT-STARS	NO	MAJOR	JOINT	NO
B-2	NO	MAJOR	NONE	NO
LIFE SUPPORT	YES	NON-MAJOR	NONE	YES
LANTIRN	YES	NON-MAJOR	FMS	YES
FPS-124	NO	NON-MAJOR	JOINT	NO
EW	NO	NON-MAJOR	JOINT	YES
ATE	NO	MAJOR	NONE	YES

F-16 program personnel manage the F-16 fighter aircraft and are involved in both Foreign Military Sales (FMS) and joint ventures with foreign nations. The Product Center component of the organization is

	PMRT	NON-PMRT
MAJOR	F - 16	JOINT STARS
NON MAJOR	LANTIRN	FPS - 124

Figure 11. Selected Programs

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located at Aeronautical Systems Center (ASC), Wright-Patterson AFB

(WPAFB) Ohio and has a staff of approximately 460 personnel, including

the single manager. The ALC component is located at Ogden ALC (OO-ALC),

Hill AFB Utah and has a staff of approximately 140 personnel. Prior to

IWSM implementation, OO-ALC was responsible for managing the F-16A and

F-16B aircraft and ASC was responsible for managing the F-16C and F-16D

aircraft. The IWSM transition has resulted in ASC managing all versions

of the aircraft.

The Low Altitude Navigation and Targeting Infrared for Night

(LANTIRN) system provides fighter aircraft the ability to navigate and

identify targets during nighttime operations. The LANTIRN system

consists of two main subsystems, the Navigation Pod and the Targeting

Pod. The program has four FMS customers. The Product Center of the

organization is located at ASC, WPAFB and is staffed by approximately 70

personnel, including the single manager. The ALC component is located

at Warner-Robbins ALC (WR-ALC), Robbins AFB Georgia and is staffed by

approximately 20 personnel. The Navigation Pod has completed its

production phase for the USAF and is continuing production for FMS

procurement. The Navigation Pod is managed by WR-ALC. The Targeting

Pod has completed approximately one-third of its USAF production and is

managed by ASC.

The FPS-124 Unattended Radar is a joint US/Canadian program which

is producing short range radars for the North Warning System. The North

Warning System consists of 39 FPS-124 radars and 15 FPS-117 Minimally

Attended long range radars. This system replaces the now defunct

Defense Early Warning (DEW) line along northern Alaska, northern Canada

and along the Labrador coast. The Product Center component of the

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organization is located at Electronic Systems Center (ESC), Hanscom AFB Massachusetts and is staffed by approximately 60 military, government, and contractor support personnel. The single manager resides at ESC. The ALC component is located at Sacramento ALC (SM-ALC), McClellan AFB California and is staffed by two personnel from a several hundred person organization. The FPS-124 is in the production phase of its life-cycle.

The Joint-Surveillance Targeting and Reconnaissance System (Joint-STARS) program is a joint USAF/US Army program. The Joint-STARS program will produce an aircraft capable of locating and tracking ground targets and providing this information digitally to other aircraft and ground units. The Product Center component of the organization resides at ESC, Hanscom AFB and is staffed by approximately 280 military, government, and contractor support personnel. Additionally, ESC has approximately 107 personnel located in Melbourne, Florida to support the Joint-STARS Joint Test Force. The single manager resides at ESC. The ALC component is located at WR-ALC, Georgia and is staffed by approximately 20 personnel. Joint-STARS is currently in the Engineering and Manufacturing Development phase of its life-cycle.

Research Instrument Development

Structured interviews were used as the primary research instrument. The research instrument was developed in four phases: Interview Scope; Archive Review; Question Development; and Interview Development.

Interview Scope. The first phase of the research instrument development was to determine the scope of the interviews. Three alternatives were considered during this phase: 1) a high level

interview conducted with the manager of each program functional area; 2) an in-depth interview conducted with a small sample of the functional areas; or, 3) an interview of moderate depth with a sample of the functional areas. The eight candidate functional areas were defined as those represented by an IWSM PAT: Program Management, Financial Management, Requirements, Contracting, Engineering, Technology Insertion, Test and Evaluation, and Logistics (McDonald and Yates, 1991). The first alternative was eliminated because this interview approach would not support the in-depth analysis necessary to fulfill the research objective. The second alternative was rejected because an inadequate sample of functional areas would have limited the applicability of the research results. By choosing the third alternative, the research effort was designed to facilitate an in-depth analysis which would yield widely applicable results. Additionally, this strategy ensured interviews were conducted at both the Product Center and the ALC, providing two dimensions of breadth: functional area diversity and Product Center/ALC diversity.

A second set of alternatives was considered regarding the type of questions to use in the interview. Questions could either be closed or open-ended. The decision to make the questions open-ended was based on the exploratory nature of the research. By allowing respondents freedom in answering questions they were able to provide insight into significant issues which were unknown to the researchers during question preparation, thus adding to the depth of the data.

> Open-ended questions are most useful when there are too many possible responses to be listed or foreseen; when it is important to measure the saliency of an issue to the respondent; or when a rapport-building device is needed in an interview. (Babbitt and Nystrom 1989:27)

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The length of the interview was the next consideration. Two factors were involved in choosing the number of questions to ask each respondent: the open-ended nature of the questions and the potential time constraints of the respondents. The researchers estimated that the average respondent would be able to spend no more than an hour participating in an interview. This estimate considered that the intended respondents were program managers or functional area chiefs who would likely have constrained schedules. Discussion with experienced interviewers supported the decision to ask interview participants approximately eight questions.

The functional areas to be interviewed were chosen by analyzing the IWSM Issues Board. The IWSM Issues Board contains IWSM issues posted by members of the 21 pilot programs and responded to by the various PATs (Pansza, 1991). Each issue is categorized as belonging to one of 17 topics. Eight of these topics are the candidate functional areas. Based on analysis of the IWSM Issues Board, candidate functional areas which submitted the largest number of issues to the board were selected. This analysis resulted in selecting the following five functional areas: Program Management (PM), Financial Management (FM), Contracting Management (CM), Engineering (EN), and Test and Evaluation (TE) (see Figure 12). These five functional areas accounted for approximately 45% of the current IWSM issues addressed under the 17 issues board topics.

Archive Review. The second phase in developing the research instrument was a thorough review of existing archival data. Included in this review was an analysis of the Roadmap study and the IWSM Issues Bulletin Board.

F-16					
	PM	FM	CM	EN	TE
PC	#	#	#	#	#
ALC	#	#	#	#	#

LANTIRN					
	PM	FM	CM	EN	TE
PC	#	#	#	#	#
ALC	#	#	#	#	#

FPS-124					
	PM	FM	CM	EN	TE
PC	#	#	#	#	#
ALC	#	#	#	#	#

Joint-STARS					
	PM	FM	CM	EN	TE
PC	#	#	#	#	#
ALC	#	#	#	#	#

\# - Selected functional area for interview.

Figure 12. Selected Programs and Functional Areas

Roadmap Study. The Roadmap study was conducted in July 1991 by the IWSM program office. This study consisted of two questionnaires, one for PAT members and one for pilot program members. These questionnaires addressed issues regarding the progress of IWSM implementation experienced by each group. A review of the questionnaires, however, determined that the questions were of a very general nature and that the responses from each program were very similar.

IWSM Issues Bulletin Board. In addition to the July 1991 IWSM questionnaire, the IWSM Issues Bulletin Board was reviewed for documents that pertain to this study. Numerous IWSM documents exist on this computerized bulletin board, which is " . . . the primary communication tool used throughout the IWSM community. . . . It is also the mechanism used to retrieve IWSM issues, directories, documents, and

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schedules" ("Roadmap II," 1991). Review of this bulletin board focused on two areas: IWSM Documents Library, and the IWSM Issues List.

IWSM Documents Library. The IWSM Documents Library was the first element of the IWSM Issues Bulletin Board which was investigated. A number of Process Analysis Papers were reviewed, however, each paper's focus was too narrow to provide the wider scope of questions needed for this study.

IWSM Issues Board. The IWSM Issues Board was the other area of the IWSM Bulletin Board reviewed. At the time of the interview development, the Issue List contained approximately 310 issues regarding IWSM implementation.

Question Development. The third phase of developing the research instrument was the development of the interview questions. Five of the questions are general and were asked of every respondent. The remaining questions are specific to the respondent's functional area. The number of functional area unique questions ranged from two, for contracting, to four, for engineering and test management. The issues obtained from the IWSM Issues Board were reviewed and categorized as either pertaining to each of the chosen five functional areas or not. Questions, based upon these issues, were developed and submitted for review by functional area specialists at AFMC Provisional Headquarters. This review resulted in both comments on question wording and prioritization based on the relevance or importance of the questions. Based upon the review, the final questions were written for each functional area (see Appendix C: Interview Questions).

Interview Development. The fourth phase consisted of developing the structured personal interview. Factors considered in the

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development of the personal interview included: type of interview, interview training, technique, data recording, and development of the non-attribution statement (Emory and Cooper, 1991:320-327).

Type of Interview. The two types of interview considered were personal and telephone interviews. Personal Interviews were determined to be the preferred approach.

> The greatest value lies in the depth and detail of information that can be secured. It far exceeds the information secured from telephone and mail surveys. . .The interviewers also have more control than with other kinds of interrogation. (Emory and Cooper, 1991:320)

Personal interviews allow the researcher to witness the facial expressions and overall attitude of the respondent. It is also possible to receive other types of non-verbal communication such as gestures. Non-verbal communication allows the interviewers to ". . . observe the problems and effects that the interview is having on the respondent" (Emory and Cooper, 1991:320).

The use of telephone interviews were considered only where personal interviews were not possible. A compromise was made due to the time and financial constraints of this research effort. Both types of interviews would be used to reach the entire sample population. This compromise would accept some degree of inconsistency in interview techniques in favor of enhancing the study's validity by capturing the broad range of personal experiences of each functional area. This inconsistency may result in differences in data quality (Emory and Cooper, 1991:332).

Interview Training. Two phases of interview training were performed. The first phase was a review of literature concerning interview techniques. This review provided the researchers with a basic

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understanding of interview techniques before advancing to the second phase. The second phase was a discussion with an experienced interviewer. The experienced interviewer discussed issues involving consistency, bias, non-attribution, data recording, and interview style.

Interview Technique. Based upon the interview training, several issues regarding technique were considered: dress, researcher roles, use of clarification and follow-up questions, formality, and respondent motivation.

Dressing consistently for each interview provides the same image to each respondent, thereby, reducing bias. To maintain a standardized appearance the USAF uniform was worn to each interview by both researchers.

Another way in which a consistent image may be presented to respondents is through the use of established roles for the research team. It was decided that the interview team would consist of a primary interviewer and a primary data recorder. The responsibility of the primary interviewer was to ask the interview questions. The responsibility of the primary data recorder was to take written notes during the interview. Either team member was permitted to ask clarification or follow-up questions.

Clarification questions, as defined by the researchers, are questions asked to ensure that the researchers understand the answer being provided. Clarification questions were permitted at any time in the interview. Follow-up questions, as defined by the researchers, are questions which are inspired by, but not directly related to, the respondent's answers to the interview questions. In the interest of

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time, follow-up questions were held until completion of all of the interview questions.

To encourage the respondent's fullest cooperation it was considered important to assure them that they were participating in a well-structured, professionally conducted research effort. A semi-formal bearing was maintained throughout the interview. Complete formality may have stifled the respondents and informal behavior may have reduced the credibility of the research effort (Bingham et al, 1959:66).

Finally, it was believed that the respondent would be more willing to cooperate if provided sufficient motivation. Two types of motivation were addressed. The first type, extrinsic motivation, may be provided to an individual by informing him that his efforts are relevant and may help the interviewer to bring about change (Kahn and Cannell, 1957:45-46). The researchers addressed extrinsic motivation by informing each respondent at the beginning of the interview that their contributions were intended to be used by programs which have not yet undergone the IWSM transition. The second type of motivation is intrinsic motivation.

> An individual is motivated to communicate with another when he receives gratification from the communication process and the personal relationship of which it is a part. (Kahn and Cannell, 1957:45-46)

The researchers addressed intrinsic motivation by making a conscious effort to keep the respondent actively involved in two ways. First, through the use of open-ended questions the respondent was free to express opinions and experiences in the manner he felt was most appropriate. Second, a rapport was established with the respondent.

Data Recording. Two types of data recording were used for this study. First, the data recording team member took written notes during each interview. The second type of data recording was the use of a cassette tape recorder. By recording the interview, the researchers may place more focus on the adequacy of the respondent's answers. Without the tape recorder, the interviewer may be distracted from conversing with the respondent by the requirement to take careful notes (Brenner et al, 1985:154). The tape recorder was used only with the permission of the respondent and with the stipulation that the tapes would only be used by the researchers for ensuring data accuracy. Respondents were also informed that tapes would be erased after completion of the research effort.

Development of the Non-Attribution Statement. Since the intent of the questionnaire was to solicit information to support the research rather than to identify personnel with areas of responsibility, the respondents were provided anonymity. This led to incorporation of a non-attribution statement (see Appendix C) which was attached to each questionnaire. Because the interview data would be identified by program and functional area, complete anonymity was not guaranteed to the respondents. However, the intent of anonymity was to encourage a more candid exchange of information and experiences (Babbitt and Nystrom, 1989:178).

Pre-Interview Procedure

The questionnaire was sent to respondents prior to the personal or telephone interview. This qualitative questionnaire was used in two ways. First, it prepared the respondent for the questions that were to

be addressed during the interview. Prepared respondents would be more likely to provide relevant information, increasing the validity of the data. Second, the questionnaire provided the respondents an opportunity to understand each question in advance of the interview, thereby increasing the reliability of the respondent's information.

Data Analysis Procedure

The analysis of the data was performed in three incremental steps: data examination, data categorization, and data evaluation.

> Data analysis consists of examining, categorizing, tabulating, or otherwise recombining the evidence, to address the initial propositions of a study. Analyzing case study evidence is especially difficult because the strategies and techniques have not been well defined in the past. (Yin, 1984:99)

Data Examination. The results of the interviews for each program were examined and synopsized. These synopses are provided in the appendices (see Appendix D: F-16, Appendix E: LANTIRN, Appendix F: FPS-124, and Appendix G: Joint-STARS). Each appendix includes the data collected from both the ALC and the Product Center and presents the responses of each person interviewed in a bullet format. This thesis includes the research data in the appendices so that USAF program personnel beginning the IWSM transition will be able to identify the sampled program which most closely models their own (see Figure 11).

Data Categorization. The examined data were analyzed for commonality, differences, and issues of significance within six different experience categories. These categories were based upon the research objectives. The six categories follow:

1. Lessons Learned,

2. Business Practices,

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3. Guidance and Expertise,

4. Communication Improvements,

5. Major Hurdles, and

6. Functional Area Unique Issues.

Initially, the data was sorted by interview question. Synopses of the data were developed for each interview question. A Data Source Code was attached to each item to identify its origin. Data Source Codes will be discussed in detail in Chapter IV. Finally, the synopses were categorized into the appropriate research objective categories.

Data Evaluation. The purpose of the data evaluation was to condense the results to the most significant issues. This effort was performed by removing and combining synopses from the long lists resulting from the categorization effort. The significance for each issue was primarily based on the frequency of occurrence of interview responses (Yin, 1984:100). Other determinations were based upon results which appeared uniquely insightful.

Limitations of the Design

The design of the research effort resulted in several limiting factors. These factors may be grouped into two categories: Design Anomalies and Research Bias.

Design Anomalies. As a result of the research design, several anomalies were noted that were not anticipated at the beginning of the research effort. First, all of the programs selected for study had located their single manager at the Product Center. This anomaly limits the applicability of the research results. Second, all ALC interviews were conducted by telephone. In contrast, 18 of the 20 Product Center

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interviews were personal interviews and only the remaining two were conducted as telephone interviews. There were two factors contributing to this unbalanced use of interview techniques. The first contributing factor was that the research effort was performed at Wright-Patterson AFB, the home of ASC, where the F-16 and LANTIRN Product Center organizations are located. The second contributing factor was that funding was made available by the FPS-124 program office to travel to Hanscom AFB to conduct interviews. Both the FPS-124 and Joint-STARS Product Center organizations are located at Hanscom AFB. The combination of these two factors made most Product Center personnel available to the researchers for personal interviews.

Research Bias. There were two primary sources of bias in this study. The design anomalies were the first source of bias. Significantly more data was obtained from product center experiences than from ALC experiences as a result of these design anomalies.

The second source of bias was researcher bias. This source introduces bias in two ways. First, it must be recognized that despite the researchers' attempts to capture all of the respondents' explanations, interviewer error will still exist in the data (Emory and Cooper, 1991:328). Researcher bias was also introduced as the data was synopsized. Paraphrasing the data may have resulted in altering the respondents' original intent.

Sample of Interview Respondents

The sample of interview respondents was chosen by first selecting the sample programs and then selecting the functional areas to be

interviewed (see Figure 12). This process identified a sample of 40 intended respondents. Several issues caused this sample to be modified.

First, there were cases where one respondent represented both the Engineering and Test Management functional areas. Second, the Joint-STARS program did not have a designated financial manager assigned to the ALC. All financial management and budgeting efforts are presently performed at the product center. After the program matures and the responsibilities for the Joint-STARS program at WR-ALC increase, a financial manager for the Joint-STARS program at WR-ALC will be assigned. Third, FPS-124 program personnel were not able to identify a focal point at the ALC for two functional areas, contracting and financial management. The researchers were advised to talk only to Product Center personnel concerning those functional areas. Finally, four interviews were conducted with two-person teams of functional area representatives. In most cases, these multiple respondent interviews were conducted to ensure the validity of the responses in situations where the functional representatives had recently assumed their positions. In several cases, experienced respondents requested that a co-worker be present to add additional value to their responses.

As a result of these issues, a total of 33 interviews were conducted rather than the anticipated goal of 40. Figure 13 displays the actual sample of respondents interviewed for this research effort.

F-16					
	PM	FM	CM	EN	TE
PC	P	P2	P	P	P
ALC	T	T	T	T	T

LANTIRN					
	PM	FM	CM	EN	TE
PC	P	P	P	P	P
ALC	T	T	T	T	T

FPS-124					
	PM	FM	CM	EN	TE
PC	P	T	P	PD	PD
ALC	T2	*	*	TD	TD

Joint-STARS					
	PM	FM	CM	EN	TE
PC	P	P2	T	P	P2
ALC	T	*	T	TD	TD

P - Personal Interview.

T - Telephone Interview.

D - Dual; one person representing two functional areas.

* - No one assigned to this functional area.

2 - Two respondents present during interview.

Figure 13. Contacted Programs and Functional Areas

IV. Results

Introduction

This chapter discusses the results of the interview process. This discussion consists of seven sections. The first section introduces the approach taken to present the results and includes a detailed description of the Data Source Codes. The remainder of the chapter provides the results of the interviews with respect to each of the research objectives: Lessons Learned, Business Practices, Guidance and Expertise, Communication Improvements, Major Hurdles, and Functional Area Unique Issues.

Interview Data Presentation

Two basic types of questions were used during the interview process: common questions and functional area unique questions. The first five questions were the same for each respondent and concerned general issues regarding individual experiences. The remaining questions addressed specific functional area issues.

The results are provided by research objective. Each research objective section provides a table summarizing the issues addressed in that section. The section discussing Functional Area Unique Issues is further divided into sub-sections for each functional area addressed. Summary tables for the functional areas are provided at the sub-section level.

In addition, each issue is accompanied by a Data Source Code (DSC) to identify specifically the source(s) of each response. The order in

which the issues are presented is based on the number of respondents who discussed that issue.

Data Source Coding. Data Source Codes were assigned to each issue for two reasons. First, the DSC provides a reference to the raw data (Appendices D, E, F, and G). Second, the usage of codes, rather than textual references, prevents this reference from dominating the issue synopses. Each code consists of three letters. Table 2 provides the key to the DSC system:

TABLE 2

DATA SOURCE CODE KEY

Program	Functional Area	Center
F - F-16	C - Contracting	P - Product Center
L - LANTIRN	E - Engineering	A - ALC
P - FPS-124	F - Financial Mgt	
J - Joint-STARS	M - Program Mgt	
	T - Test Mgt	

Example: (FEA) refers to the F-16 engineer at the ALC.

Lessons Learned

To satisfy the Lessons Learned research objective, respondents provided retrospective recommendations regarding improvements to the IWSM implementation process. Table 3 lists the six significant issues resulting from the data analysis and is followed by brief explanations of each issue.

TABLE 3

LESSONS LEARNED

Establish a Direct Chain of Command.

Use Total Quality Management.

Conduct Initial IWSM Orientation.

Involve Workers in Transition.

Consider Implications of a PMRT Reversal.

Establish Procedure for Settling Differences.

Establish a Direct Chain of Command. A direct chain of command provides a clear line of responsibility from the single manager to the lower management levels at both centers. Those programs without a direct chain of command, F-16 and FPS-124, have encountered some difficulty at the ALC (the location without the single manager). The managers at the ALC functionally report to the single manager but formally report through the ALC management chain of command, causing them to "serve two masters." The functional chain of command is dominant in the F-16 program while the formal chain of command dominates in the FPS-124 program.

The Joint-STARS and LANTIRN single managers each implemented direct reporting chains differently. After first experiencing difficulty in establishing a formal chain at WR-ALC, the LANTIRN single manager moved a lieutenant colonel slot to the ALC. The lieutenant colonel was designated as a deputy program manager and reports directly to the single manager. The Joint-STARS manager at WR-ALC formally

reports to the Deputy Program Manager for Logistics (DPML) at ESC. In this case, although the ALC manager does not report directly to the single manager, he does formally report to one management level down from the single manager. In both cases, only the first level supervisor for the ALC manager is located at the Product Center. Officials endorsing their personnel evaluations are in the ALC chain of command.

There is also a negative aspect to a direct reporting chain of command as a result of IWSM implementation. Some ALC managers feel that their responsibilities have decreased. They are no longer able to make program decisions without first obtaining approval from the Product Center. There is also some concern that Product Center managers now perceive their role to include oversight of ALC work in a manner similar to their oversight of contractor activities.

(FEA)(FEP)(FFA)(FMA)(FMP)(FTA)(LEA)(LMP)(LMA)(PEA)(PMA)(JCA)(JEA)(JMP)
(JTA)

Use Total Quality Management. TQM principles were used, to varying degrees, by all of the sample programs during their IWSM implementation. The TQM philosophy focuses on satisfying the customer through leadership, continuous improvement, and employee empowerment (Emmelhainz, 1991:35). Two aspects of TQM were predominant. First, some of the IWSM participants were unfamiliar with TQM and its philosophies. TQM training was provided to a large number of the IWSM participants to overcome this deficiency. Second, process charting was used by respondents from both the F-16 program and the Joint-STARS program. This effort provided both Product Center and ALC personnel an opportunity to understand how each functional area fit into the new

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organization. This effort also promoted an initial sense of organizational unity.

(FCP)(FCA)(FFA)(FMA)(FMP)(FTP)(LCP)(LEA)(LMP)(PMP)(JEP)(JMA)

Conduct Initial IWSM Orientation. At the start of the IWSM transition, personnel in all of the sample programs struggled to understand the IWSM concept. An initial orientation session conducted at the outset of IWSM implementation alleviated this problem for some programs. Both the Joint-STARS and LANTIRN IWSM implementors conducted initial orientation meetings. Joint-STARS personnel from both centers met at WR-ALC to discuss implementation approaches, while LANTIRN personnel conducted a similar meeting at an off-site conference in Tullahoma, Tennessee. These meetings helped program personnel develop an improved understanding of IWSM concepts. Additionally, these meetings provided opportunities for program personnel to learn the roles of their counterparts. Some respondents suggested that orientation meetings provided the most significant contribution to the IWSM development process.

(FFP)(LEP)(LFA)(LFP)(LMP)(PEA)(JEA)(JMA)(JTP)

Involve Workers in Transition. There are two advantages to involving the working level personnel in the IWSM transition development. First, the workers possess a detailed understanding of existing processes which contributes to the development of realistic new processes. Second, working level involvement cultivates ownership of the new processes. However, there can also be negative impacts to worker involvement. There were cases where a program director instructed an ad hoc team to develop new processes with few constraints, only to have all resulting recommendations rejected. In some cases, the

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ultimate consequence has been a degradation of employee morale.
(FFA)(FTP)(LEP)

Consider Implications of a PMRT Reversal. The F-16 program
experienced a "reverse PMRT" when they re-assumed responsibility for the
F-16A and F-16B aircraft. This arrangement allows one office to
maintain responsibility for all F-16 configurations, making multi-
configuration modifications easier to manage. This also allowed the F-
16 program to consolidate two Technical Order Management Agencies (TOMA)
into one TOMA at the Product Center, ASC. One obstacle to the reverse
PMRT process was the lack of data available at ASC for F-16A and F-16B
configurations.
(FMP)(FTP)

Establish Procedures for Settling Differences. Establish
procedures for settling differences between the merging organization
before differences arise. Objective solutions to differences become
more difficult to find when a particular issue is at stake. A FPS-124
respondent suggested identifying an individual with authority to make
unilateral decisions when agreement cannot be reached between
representatives from the two centers.
(PEP)

Business Practices

Respondents were asked to identify ways in which their business
practices have changed as a result of implementing IWSM. Table 4 lists
the four significant issues resulting from the data analysis and is
followed by brief explanations of each issue.

TABLE 4

BUSINESS PRACTICES

Increase Product Center/ALC Interaction.

Conduct Joint Configuration Control Boards (CCBs).

Redistribute Program Resources.

Use Integrated Product Team Approach.

Increase Product Center/ALC Interaction. Some respondents stated
that establishing professional relationships with their counterparts was
a key ingredient to integrating the two organizations. This
relationship was fostered not only through telephone calls and
electronic mail, but also through periodic "face-to-face" meetings. The
periodic meetings helped establish a team environment and eliminate an
"Us versus Them" culture. TDY budgets were adjusted to accommodate this
activity.

(FCP)(FEA)(FEP)(FFP)(FMP)(FTP)(LCP)(LEA)(LEP)(LFA)(LFP)(LMA)(JCP)(JEA)
(JEP)(JMA)(JMP)(JTP)

Conduct Joint Configuration Control Boards (CCBs). Joint
Configuration Control Boards are a natural extension of the single
manager concept. There are several issues related to joint CCBs:
membership, communication, and schedules. Each program has approached
CCB membership differently. The F-16 program has integrated the CCB to
include representatives from both centers. The CCBs are conducted via a
teleconference using speakerphones. The briefer may present from either
location. LANTIRN conducts CCBs at the Product Center (ASC) with a

single ALC (WR-ALC) representative involved via teleconference. Neither the FPS-124 program nor the Joint-STARS program has joint membership. Life-Cycle Stage may be a factor in choosing an approach to establishing CCB membership. The sample programs which have instituted joint CCBs, F-16 and LANTIRN, are the more mature programs and had experienced a PMRT before implementing IWSM. Both have significant representation at both centers. The programs that do not have joint CCB membership are not as mature and have significantly larger representation at the Product Center than at the ALC.

The communication process between centers improved as a result of implementing joint CCBs. ALC personnel indicated that they now have more input to the CCB process. Conversely, in programs without a joint CCB, personnel have expressed concern that they now have less input to CCB decisions than before IWSM implementation.

The F-16 program also changed the way in which CCBs are scheduled. Before IWSM implementation, CCBs for no-cost ECPs were held on an ad-hoc basis. Ad-hoc scheduling proved to be inefficient. In some cases CCBs were held within days of each other. The scheduling process was changed to accumulate no-cost ECPs and hold these CCBs on a periodic basis. (FCP)(FEA)(FEP)(FMP)(FMA)(LCP)(LEA)(LEP)(LMA)(LMP)(PEP)(PEA)(JEP)(JEA)

Redistribute Program Resources. The merger of Product Center and ALC organizations resulted in a decrease in administrative and travel funding support from the ALC. This has caused some ALC organizations to become dependent on the Product Center. ALC program managers perceived that the ALC staff expects Product Center organizations to fund their ALC counterparts. The Product Center organizations have responded to this expectation. Examples were cited of ALC organizations receiving

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more resources from the Product Centers than they have historically received from the ALC. Resource increases included delivery of computers, office supplies, facsimile machines, and increased TDY funds. (FFP)(FMP)(FTP)(LFP)(LFA)(JEA)(JFP)(JMP)(JMA)

Use Integrated Product Team Approach. Three of the four sample programs implemented an Integrated Product Team approach prior to IWSM implementation. Some IPTs consisted of members from both centers. This practice added to the cross-flow of communication between the centers and aided the IWSM transition. The LANTIRN program added a third IPT as a result of IWSM. In addition to a Navigation Pod team and a Targeting Pod team, a Depot activation team was developed to manage sustainment issues.
(FTP)(LCP)(LEP)(LFA)(LTP)(JMP)

Guidance and Expertise

Respondents were asked to identify any sources of guidance or expertise which helped improve their IWSM implementation. Table 5 lists the six significant sources identified during the data analysis and is followed by brief explanations of each source.

Internal Group Efforts. At the start of IWSM implementation, there was little direction provided to the pilot programs. There were no sources with the necessary IWSM expertise available to provide daily guidance. Personnel, using TQM principles, organized groups within their programs to resolve implementation issues and to develop their own guidance.
(FCA)(FEA)(FFA)(FTA)(FTP)(LEA)(LEP)(LFA)(LFP)(LMA)(LMP)(LTP)(JCA)(JCP)
(JEA)(JFP)(JMP)

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TABLE 5

GUIDANCE AND EXPERTISE

Internal Group Effort.

HQ AFMC (P) Products.

Meeting Facilitator.

Other IWSM Programs.

HQ Staff.

Team Building Training.

HQ AFMC (P) Products. As IWSM matured, the provisional AFMC
headquarters developed guidance in the form of various products. These
products consisted of generals' briefings, IWSM videos, Roadmap papers,
white papers, and the IWSM Bulletin Board. Some personnel found these
products to be useful during the transition. The IWSM Implementation
Plan was an additional source of guidance. Each program was required to
develop an implementation plan for approval by the IWSM Steering
Committee. The process of developing and obtaining approval of these
plans resulted in valuable feedback and an improved understanding of
IWSM. (FCA)(FTP)(LCP)(PMA)(PMP)(JEP)(JMA)

Meeting Facilitator. During the initial joint center meetings
facilitators helped keep personnel focused on the issues at hand. They
also provided suggestions to help reach consensus. Meeting facilitators
were obtained either from within the organization or from contractors.
(PFP)(JCA)(JFP)(JMP)(JMA)(JTP)

Other IWSM Programs. During the initial stages of IWSM
implementation, the guidance provided by AFMC was not specific enough to

effectively aid the pilot programs. Program personnel found that the best advice came from discussions with personnel from other IWSM programs.

(FMP)(FMA)(PCP)(PEP)(JCP)

HQ Staff. Some guidance was obtained through personal contacts at AFSC headquarters. These contacts provided program personnel, informally, with insights into upper management IWSM philosophies.

(FCP)(LMP)(JCP)

Team Building Training. To build a cohesive, team-oriented approach to IWSM, the LANTIRN program provided a three-day team training session to each of their IPTs.

(LCA)(LFA)(LMA)

Communication Improvements

Respondents were asked to identify ways in which they have improved communication between the geographically separated centers. Taole 6 lists the four significant suggested improvements resulting from the data analysis and is followed by brief explanations of each improvement.

TABLE 6

COMMUNICATION IMPROVEMENTS

Increase Teleconferencing.
Establish a Local Area Network.
Increase Use of Facsimile Machines.
Increase Use of Video Teleconferencing.

Increase Teleconferencing. The most significant change to communication practices has been the increased reliance on teleconferencing. The term teleconference refers to two-person telephone conversations as well as to group discussions using speakerphones. Personnel from all of the programs reported they have benefitted from the use of teleconferences between the two centers. Teleconference usage ranged from daily conversations between counterparts to weekly or less frequent contacts. The LANTIRN program upgraded their speaker-phone capability to meet increased demand.
(FCA)(FCP)(FEA)(FEP)(FFP)(FFA)(FMA)(FTP)(FTA)(LCA)(LCP)(LEA)(LEP)(LFA)
(LFP)(LMA)(LMP)(LTP)(PMP)(JCP)(JEP)

Establish a Local Area Network. Three of the four sample programs have established a Local Area Network (LAN) between the two centers. The LAN facilitates transmission of electronic mail between centers. Previously used data links required special addresses to send electronic mail between centers. Also, older links could only support sending text. The LAN uses simple addresses for personnel at both centers and allows electronic exchange of documents, briefings, and graphics.
(FCP)(FCA)(FEP)(FFA)(FFP)(FTP)(LCP)(LEA)(LFP)(JCP)(JEA)(JEP)(JFP)(JMA)
(JMP)(JTP)

Increase Use of Facsimile Machines. Three of the four sample programs noted an increase in the usage of facsimile machines. The F-16 program was in the process of procuring additional machines to meet this increased usage.
(FCP)(FEP)(FMP)(FTA)(FTP)(LCP)(LEP)(JCP)(JEP)(JFP)

Increase Use of Video Teleconferencing. Three of the four sample programs also noted an increase in the use of Video Teleconferencing (VTCN). VTCN usage can reduce TDY travel. However, there has been some delay in procuring additional VTCN equipment until a USAF VTCN standard is established to ensure the compatibility of systems between centers. (FMP)(FTP)(PEP)(PMP)(JCA)(JMA)(JMP)

Major Hurdles

Respondents identified the most significant problems, or "hurdles," experienced during IWSM implementation. Table 7 lists the six significant hurdles resulting from the data analysis and is followed by brief explanations of each hurdle.

TABLE 7

MAJOR HURDLES

Cultural Differences.
Insufficient Initial Guidance.
"Rice Bowl" Mentality (Job Security).
Program - PAT Conflicts.
Increased Workloads.
Inter-organizational Relations.
Increased Interfaces for the Single Manager.

Cultural Differences. Differences in organizational culture were the most significant hurdle reported by the IWSM pilot programs. Five cultural issues were identified as most notable: "Us versus Them,"

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management resistance, counterpart responsibilities, language barriers, and risk management.

During initial IWSM meetings, concern over job-security created an "Us versus Them" environment. There was concern from both centers that an organization at one center would "take-over" the responsibilities of the organization at the other center. This environment created perceptions of geographic relocation and job loss. With the focus on these concerns, personnel found it difficult to develop the changes necessary to merge.

The FPS-124 program has experienced management resistance to IWSM at SM-ALC. For example, one manager attempted to prevent certification of acquisition personnel due to concerns of losing people from his matrix organization to the Product Center's program organization.

Another difficulty was the process of learning counterparts' roles and responsibilities. The process first involved identifying counterparts. Next, counterparts explained their functions in detail and, in some cases, developed process flow charts. However, this effort was impacted by language barriers. Terms used commonly at both centers did not always have the same meaning. The difference was compared to the difference between British-English and American-English.

One manager proposed a theory explaining some of the differences in cultures. This theory suggested that the AFSC mission involved taking higher degrees of risk. Personnel who have succeeded in AFSC, the theory suggests, have tended to thrive on risk. The AFLC mission

involves maintaining system support stability. Those successful in AFLC
tend to avoid risk.

(FCP)(FEA)(FEP)(FMP)(FTA)(FTP)(LEA)(LEP)(LFA)(LFP)(LMA)(PEP)(PEA)(PFP)
(PMA)(PMP)(JEP)

   Insufficient Initial Guidance. Pilot programs were initially told
that they had complete freedom to design the new organizations.
However, in many cases their initial attempts were rejected by the
provisional AFMC headquarters. This caused program personnel to develop
their Concept of Operations (CONOPs) several times without guidance
necessary to avoid rejection on the next review. The effort to re-
develop the CONOPs resulted in early frustration. Sample program
personnel believed that guidance was being developed as problems were
being experienced. Many believed that confusion could have been avoided
if guidance been provided earlier.

(FCA)(FCP)(FMA)(LTP)(PCP)(PFP)(PMP)(JCA)(JCP)(JFP)(JMA)(JMP)

   "Rice Bowl" Mentality (Job Security). The term "Rice Bowls" was
used to describe people's parochial interests. Rice Bowls have been
experienced within the organizations at both centers and outside the
organizations at functional home offices. In anticipation of "turf
battles," the F-16 single manager refused to let anyone make
organization charts until after new business practices were well
defined.

(FCP)(FEP)(FMP)(LTP)(PEP)(PMP)(JEP)(JFP)(JMP)(JTP)

   Program - PAT Conflicts. There was initial difficulty
communicating with the PATs. This difficulty was attributed to the
early start date of the transition and to the fact that the PATs had not
yet established guidelines. There was also difficulty getting answers

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from the PATs. PAT guidance often turned into direction. In some cases, IWSM implementors postponed making transition developments over concern that the PATs would force them to change what they had done. Some PAT guidance seemed to say in effect: "This never happened here, but it did happen someplace, so never let it happen here again." Respondents suggested that earlier face-to-face meetings between the PATs and the programs would have been beneficial and possibly alleviated the conflicts.

(FEP)(FFP)(FMP)(LMA)(PCP)(PEP)(JFP)

Increased Workloads. Before implementing IWSM, most workers already had very busy schedules. The IWSM transition added to the workload. Based on the opinion of some managers, IWSM has not yet saved any manpower. In fact, existing personnel have more to do with IWSM taskings. Some managers are concerned about the expected decreases in personnel. As an example, the ALC contracting support for the F-16 program is expected to drop from 107 personnel to approximately 55 personnel by 1995 without a decrease in program activity. No programmed increase in personnel is expected at the Product Center to accommodate the added workload.

(FCP)(FEP)(FEA)

Inter-organizational Relationships. Some program personnel have experienced difficulty with outside organizations. These organizations, unfamiliar with IWSM, have difficulty accepting changes to business practices and reporting chains.

(PMP)(JMA)

Increased Interfaces for the Single Manager. One of the stated goals of IWSM is to provide a "single face to the user." Figure 14

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ACQUISITION

THE SINGLE MANAGER CONCEPT

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         D A E

         S A E

         P E O
                        SINGLE FACE
     F-16 S P D ─────────────────────  T A C
                          TO USER
         I W S O
```
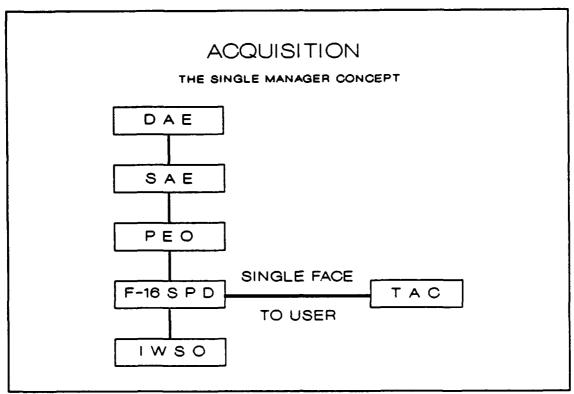
Figure 14. Single Manager Concept (Shelton, 1992)

displays the F-16 "single face to the user" concept. However, the

concept also implies that the single manager must now become the only

point of contact to all customers and oversight organizations. For

example, because the F-16 program personnel manage funds provided

through both the Program Executive Office (PEO) and the ALC Designated

Acquisition Commander (DAC), the F-16 single manager must interface

through at least two USAF oversight organizations. The process is

displayed in Figure 15. The single manager must also interface with

numerous customers, including FMS customers, and several DoD level

oversight committees. Figure 16 displays the F-16 single manager's

perspective on his interface environment. The single manager now has

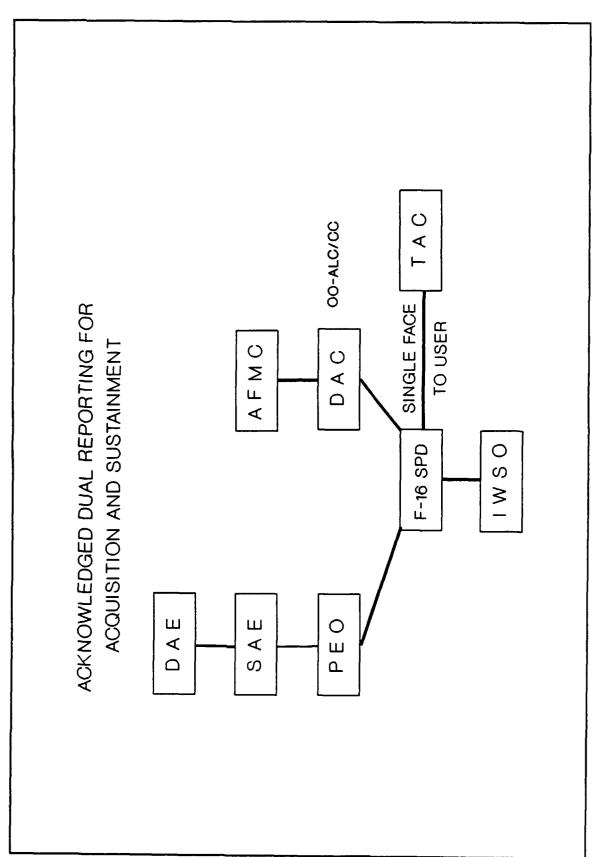difficulty being responsive to so many other organizations.

(FMP)

ACKNOWLEDGED DUAL REPORTING FOR
ACQUISITION AND SUSTAINMENT
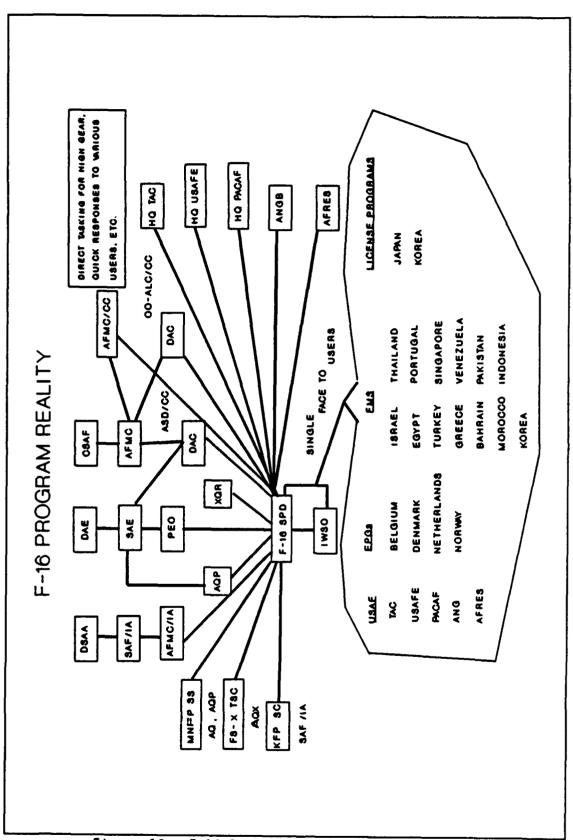
Figure 15. Dual Reporting (Shelton, 1992)

Figure 16. F-16 Program Reality (Shelton, 1992)

Functional Area Unique Questions

Respondents were asked questions pertaining to their functional area. The questions were asked to identify any functional area unique peculiarities resulting from IWSM. The following sections discuss recommendations that were found to be unique to functional areas.

Contracting. Contract managers were asked to discuss how IWSM implementation has impacted their contract(s) and how IWSM has impacted their relationship with the Defense Contracting Management Administration Offices (DCMAO). Table 8 lists the five significant recommendations resulting from the data analysis and is followed by brief explanations of each recommendation.

TABLE 8

CONTRACTING

Consider the DCMAO Relationship.
Expect No Impact to Existing Contracts.
Expect Opportunity to Improve Contract Management.
Study New Contracting Regulations.
Consider Obtaining a Common Clearance Authority.

Consider the DCMAO Relationship. The relationships between contract managers and Defense Contracting Management Administrative Offices were not impacted by IWSM transitions. However, DCMAO involvement in analyzing contracting processes was considered beneficial by contracting managers. Respondents also emphasized that by keeping

the DCMAO involved during the transition, DCMAO personnel are better prepared to adjust to the business practice changes experienced by the program offices.

(FCP)(FCA)(LCA)(LCP)(PCP)(JCP)(JCA)

Expect No Impacts to Existing Contracts. There were no cost or schedule impacts to existing contracts as a result of IWSM implementation.

(FCP)(FCA)(LCP)(PCP)(JCP)

Expect Opportunity to Improve Contract Management. IWSM has resulted in increased coordination between the contracting offices at each center. The increased coordination has, in some programs, eliminated the contractor's ability to play one center against the other. For example, prior to IWSM, when one center stopped progress payments to the LANTIRN contractor due to schedule delays, the contractor would stop working on the other center's efforts until progress payments resumed. Now, both centers stop progress payments together when it is necessary. The increased coordination between centers provides a more unified face to the contractor.

Before IWSM, the F-16 Product Center contracting office was burdened with performing extra management to obtain money from the ALC to fund contract modifications which affect systems for which the ALC had program management responsibility. The extra management was necessary to ensure that funds were transferred from the ALC finance offices in time for use on the Product Center contract. Now, with control of modification funds residing with the single manager, the F-16 contract manager has found it easier to fund these contract changes.

(FCP)(LCP)(LCA)(JCP)

Study New Contracting Regulations. Contract Management was identified as the most process oriented functional area. Contracting officers' authority is limited by numerous laws and regulations. Therefore, contract managers could not fully transition to IWSM until new contracting regulations were provided.
(FCA)(JCA)

Consider Obtaining a Common Clearance Authority. A disparity exists in the contracting authority granted contracting officers between Product Centers and ALCs. For example, the product center contract manager for the F-16 program has a $25M ceiling while his ALC counterpart's is $10M. To eliminate this difference, the contract manager at the Product Center requested the authority to delegate his authorization level to his ALC counterpart. This request was approved by the office of the Assistant Secretary of the Air Force for Acquisition.
(FCP)

Engineering. Engineering managers were asked how IWSM affected: the relationships with commodity program offices; the involvement of ALC sustainment engineers in design activities; the membership of the CCB; and the roles and responsibilities of engineers at each center. Table 9 lists the two significant recommendations resulting from the data analysis and is followed by brief explanations of each recommendation.

Consider Commodity Programs. Some commodity relationships have been impacted as a result of IWSM implementation. Before IWSM, the F-16 engineer at OO-ALC worked directly with commodity organizations. Now, he must coordinate these actions with engineers at ASC. This has

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TABLE 9

ENGINEERING

Consider Commodity Programs.

Define New Roles and Responsibilities.

caused a negative impact to the relationship between the ALC engineer
and commodity organizations.

LANTIRN system users have not adjusted quickly to the new program
organizational structure. They have refused to accept ALC LANTIRN
engineers as representatives of the program office. As a result,
Product Center engineers have had to send written correspondence to
users validating statements made by the ALC engineers at meetings.
(FEA)(FEP)(LEP)(LEA)(PEP)(PEA)(JEP)(JEA)

Define New Roles and Responsibilities. Consistent with the
need to establish the chain of command from the single manager,
engineers at both centers also need to define their roles and
responsibilities. With the exception of the Joint-STARS program, there
has been little effort to integrate the sustainment engineering
expertise from the ALCs into the design process. There has been greater
focus on eliminating duplication of effort. Approaches to establishing
the roles and responsibilities differ between sample programs. Through
the use of IPTs, the LANTIRN engineers from both centers are involved in
all aspects of the system. Engineers from both centers of the F-16
program are also involved in system-wide issues. The Joint-STARS ALC
engineers focus on sustainment issues and, on request, comment on design

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issues which are managed by the Product Center engineers. Engineering

for the FPS-124 program is now performed almost exclusively at ESC. In

the F-16 and LANTIRN programs, the ALC engineers functionally report to

the lead engineer at ASC. In general, the ALC engineers report they

have assumed a more subordinate role than held in the past.

(FEP)(FEA)(LEA)(LEP)(PEP)(PEA)(JEP)(JEA)

Financial Management. Financial Managers were asked to discuss

problems they experienced regarding the use of different appropriations.

Financial Managers were also asked to identify any affects on the

reporting of manpower costs resulting from IWSM. Table 10 lists the

five significant recommendations resulting from the data analysis and is

followed by brief explanations of each recommendation.

TABLE 10

FINANCIAL MANAGEMENT

Provide Visibility to the Single Manager.
Make Early Decision on DAC/PEO Funding Chain.
Reconcile Differences in Funding Approaches.
Consider Impacts from DBOF Changes.

Provide Visibility to the Single Manager. The inability to

identify all of the different types of money at the ALC supporting a

program is a common concern of financial managers. As an example, the

LANTIRN financial manager has difficulty managing two types of funding

that are not under the single manager's control: Cost of Operations for

Depot (COD) and Replenishment of Spares for Depot (RSD). This ALC stock fund money is not program specific, so the single manager has no cognizance of the COD and RSD budgets. Without this visibility, the manager has little input into the allocation of these funds. One manager in the Joint-STARS program reported that when you start IWSM, you sign up for unfunded requirements. This statement was based on the assumption of responsibility for buying infrastructure equipment (such as trucks, sheet metal, machinery, etc.) which had never been budgeted for the program. In contrast to the LANTIRN and Joint-STARS programs, the responsibility for modification money for the F-16 program has moved from the ALC to the Product Center providing the F-16 single manager increased access to program funds.

(FFA)(FFP)(FMA)(LFP)(JMP)

Make Early Decision on DAC/PEO Funding Chain. The two major programs, F-16 and Joint-STARS, experienced difficulty in deciding what funding would be obtained through the PEO and what funding would be obtained through the ALC's DAC. Personnel in both programs believed that earlier funding source decisions would have allowed earlier development of financial management processes.

(FCA)(FCP)(FFA)(JCA)

Reconcile Differences in Funding Approaches. Two differences in funding approaches between ALCs and Product Centers were highlighted by financial managers. First, centers differ in the way they manage appropriations. Product center financial managers have experienced difficulty in adjusting to the "many different colors of money" that exist at an ALC. ALC financial managers have experienced difficulty in adjusting to the ways that Product Centers use 3600

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(Research and Development) funds. The second difference stems from the use of obsolete terms. Some existing ALC policies, regarding the use of funds, are dependent on now obsolete words or terms such as PMRT. These policies need to be updated to use new common terms so that they provide unambiguous guidance.

(FTP)(JFP)(FFA)(LFP)

    Consider Impacts from DBOF Changes. Although no specific examples were provided, personnel within the Joint-STARS program expressed greater concern over changes to their processes resulting from Defense Business Operating Funds (DBOF) developments than from IWSM.

(JFP)(JMA)(JMP)

    Program Management. Program Managers at each center were asked how IWSM has affected: the Program Objective Memorandum (POM); the roles and responsibilities of the single manager; the Program Management Directive (PMD); and formal agreements with other programs. Table 11 lists the four significant recommendations resulting from the data analysis and is followed by brief explanations of each recommendation.

TABLE 11

PROGRAM MANAGEMENT

Expect Changes to Management Approach.

Expect to Change the PMD.

Expect Possible Changes to MOAs.

Expect Changes to the POM.

Expect Changes to Management Approach. As expected, single managers now view their programs from a "cradle-to-grave" perspective. Managers from three of the four programs report an increased focus on support issues resulting from IWSM. The emphasis of the LANTIRN single manager, for example, has changed from a short term vision to a long term vision where more balanced decisions can now be made. Not all managers share this view. Some ALC managers are concerned that the concept of single management has been "oversold" because no one manager will hold that position through the life-cycle of the system. This may tempt managers to continue to focus on near term issues at the expense of long term strategies. The FPS-124 single manager did not perceive a change to his responsibilities. He stated that support planning has always been his responsibility and this will not change due to IWSM. (FMA)(FMP)(LFA)(LMA)(LMP)(PMA)(PMP)(JMA)(JMP)

Expect to Change the PMD. Managers from two of the sample programs, FPS-124 and Joint-STARS, reported only minor changes to their PMD due to IWSM. These changes include organizational names and elimination of PMRT dates. The managers from the other two programs reported significant PMD changes due to IWSM. These changes include consolidation of multiple PMDs and the incorporation of all class-four modifications into this new combined PMD. During the update of the FPS-124 PMD, concern arose at SM-ALC over the lack of a date for the system to transition to the ALC in place of the PMRT date. This continues to be a concern.
(FMA)(FMP)(LMA)(LMP)(PMA)(PMP)(JMA)(JMP)

Expect Possible Changes to MOAs. Changes to the program management structure resulting from IWSM may require that new

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Memorandums of Agreement (MOA) be established or require that existing MOAs be updated. Personnel from three programs reported the need for new MOAs as a result of IWSM. The Joint-STARS program developed an MOA between the PEO and the ALC commander concerning continued personnel and infrastructure support for Joint-STARS. The LANTIRN program is establishing a MOA to define their relationship with a supporting commodity program. The F-16 manager at the ALC stated that agreements are being established with on-base organizations.

(FMA)(FMP)(LMA)(LMP)(PMA)(PMP)(JMA)(JMP)

Expect Changes in Managing the POM. Three of the four sample programs changed some aspect of their Program Objective Memorandum (POM) submission process. Changes included: increased attention to the system user's POM submission, consolidated program funding into a single POM submission, and the addition of spares to the POM. Frequent comments were also made that it would be ideal to have one "color of money" so that greater flexibility can be provided to the user when considering system cost/performance trade-offs.

(FMP)(FMA)(LMP)(LMA)(PMP)(JMP)

Test Management. Test Managers were asked how IWSM affected: roles and responsibilities of test managers at each center; composition of test teams; test and evaluation processes; and formal agreements with other organizations. Table 12 lists the two significant recommendations resulting from the data analysis and is followed by brief explanations of each recommenation.

Define New Roles and Responsibilities. Two changes to test managers roles and responsibilities were reported by respondents. First, consistent with reports from the engineering functional area,

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TABLE 12

TEST MANAGEMENT

Define New Roles and Responsibilities.

Consider Impacts to Processes.

test managers at the ALCs have experienced an increase in the review of work performed at the ALC. For example, the Product Center portion of the F-16 program reviews test plans/procedures developed by the ALC. Second, an increased focus on support issues in test planning was reported by personnel from the FPS-124 and Joint-STARS programs. Other than the increase in review process and increased focus on support, test managers have not experienced much change in their responsibilities. (FTA)(FTP)(LTA)(LTP)(PTA)(PTP)(JTA)(JTP)

Consider Impacts to Processes. The only reports of changes to test processes were made by personnel from the F-16 program. F-16 test personnel updated the Test and Evaluation Master Plan (TEMP) to include the previously PMRT'd F-16A and F-16B aircraft. This update has required increased participation by OO-ALC test personnel in managing the F-16 TEMP. There is also an attempt to develop an interim level master test plan. The scope of this new plan would be between the scope of a TEMP and the individual test plans. The F-16 test manager is attempting to change other test processes by developing centers of expertise at each test center. The FPS-124 and LANTIRN systems have matured to a point that a TEMP is no longer required. (FTA)(FTP)(LTA)(LTP)(PEP)(PTA)(PTP)(JTP)

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V. Conclusions and Recommendations

Introduction

This chapter provides conclusions regarding parallels between corporate mergers and IWSM, from a program level perspective. Conclusions are also provided for each research objective. Finally, recommendations are provided to future IWSM implementors, to HQ AFMC, and to future researchers.

Corporate Mergers and IWSM

Despite the many differences that exist between USAF programs and corporate firms, the results of this research suggest that many of the issues pertaining to corporate mergers are also applicable to the merger of ALC and Product Center program components. The following sections will address two of these issues: Influencing Factors, as described by Peluchette and Ramaprasad, and the Facilitation Strategies described by Dodgen.

Influencing Factors. Based upon the interview descriptions and the definitions of synthesis modes provided by Peluchette and Ramaprasad, each program used either the integration mode, assimilation mode, or separation mode. The mode identification is provided in Table 13.

The size of the organizations at each center contributed to the selection of a synthesis mode. Figure 17 displays how the programs fit into the Organizational Size vs Synthesis Mode Matrix presented in Figure 2. Three of the four sample programs merged using a synthesis

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TABLE 13

PROGRAM MODE IDENTIFICATION

Program	Synthesis Mode
F-16	Integration
LANTIRN	Integration
FPS-124	Separation
Joint-STARS	Assimilation

mode consistent with size as an influencing factor. The FPS-124 program has not implemented either the Assimilation or Disintegration mode as the matrix suggests. This will be addressed during the discussion of the Life-Cycle Stage and Geographical Location.
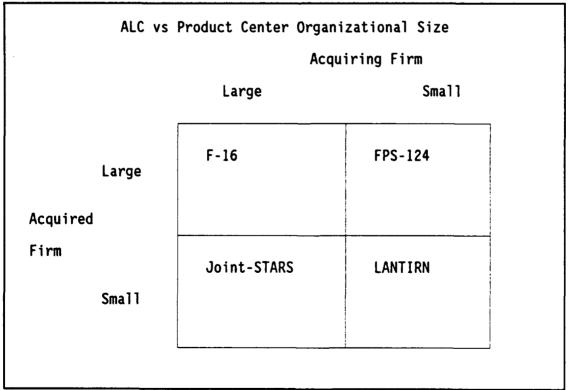
ALC vs Product Center Organizational Size

Acquiring Firm

	Large	Small
Large	F-16	FPS-124
Small	Joint-STARS	LANTIRN

Acquired Firm

Figure 17. ALC vs Product Center Organizational Size Matrix

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Neither the nature of acquisition nor labor agreements impacted IWSM at the program level. The USAF programs were directed to merge, thereby not allowing either center the option to choose the nature of acquisition. Also, the interview results revealed no evidence of changes made to existing labor agreements. These agreements are not controlled by program managers but by base commanders.

The program's current life-cycle phase contributes to the selection of a synthesis mode. The Joint-STARS program, for example, is still in it's development phase. At the start of the IWSM transition the ALC was beginning its involvement in the program (Stage 1). The Product Center component was much more involved and very active in the system development (Stage 2). Figure 6 displays the results of using life-cycle stages as an influencing factor. These results match the same synthesis mode as chosen by using size as an influencing factor. Both the F-16 and LANTIRN programs had transferred program management responsibility for portions of their program before beginning the IWSM transition. Each center program component was mature but not ready to conclude operations (Stage 3). The integration synthesis mode used by the programs is also consistent with Peluchette and Ramaprasad's model. The FPS-124 program, which was nearing PMRT at the start of the transition, has experienced more difficulty in merging the two organizations. While the Product Center component was preparing to transfer responsibility of the system to the ALC (Stage 3), the ALC was preparing to assume the responsibility (Stage 2). Figure 6 yields separation as a recommended synthesis mode, consistent with the mode observed from the research.

The third relevant influencing factor is geographical location. As suggested by the model, the research indicates that greater distances between merging centers makes the integration mode more difficult to implement. Of the sample programs, the FPS-124 program components were located furthest apart. This program experienced fewer TDYs and less overall communication between centers, consistent with the implemented separation mode.

None of the sample programs had any previous experience with ALC/Product Center mergers before IWSM. Lack of an acquisition history provided no basis for comparing this influencing factor to IWSM.

Facilitation Strategies. Consistent with Dodgen's study, this thesis determined that four facilitation strategies are important to a successful IWSM transition: pre-acquisition planning, change management, communication, and leadership.

The research concluded that more emphasis was needed on pre-acquisition planning at the program level. Many IWSM participants identified this requirement during their transition and this thesis recommends that an AFMC IWSM orientation program be established to aid programs that implement IWSM in the future. Orientation sessions should include discussions on IWSM goals, IWSM guidelines, TQM processes, and possible organizational structures.

Total Quality Management principles were used by all of the sample programs to manage change. These principles provide a structure for working level participants to influence the merger.

All of the sample programs made communication improvements between the centers. Most functional area managers were aggressive in establishing good communications with their counterparts. In some cases

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this was achieved through technological changes, in others it was achieved through increased "face-to-face" meetings. Effective communication between center counterparts is critical to successful IWSM implementation.

Program leadership proved to be a key element to successful IWSM implementation. IWSM participants faced numerous hurdles, the most significant of which was insufficient initial guidance. By providing a structure to the transition process and by sharing their IWSM vision, program managers helped personnel to overcome these difficulties and to remain focused on making the transition work.

Recommendations

Recommendations were developed based upon the research results and conclusions. These recommendations were categorized by audience. The three resulting audience categories are: programs beginning IWSM implementation, Headquarters AFMC, and future researchers.

Programs Implementing IWSM. The following recommendations are provided for all future IWSM implementors:

1. Establish or improve communications between the merging organizations. Frequent and reliable communication is important to a successful IWSM merger. Do not underestimate the value of "face-to-face" meetings. Other types of communication improvements have also proven helpful, these are displayed in Table 14.

2. Provide TQM training to all IWSM implementors. Successful transition relies on the ability to analyze processes. Implementors without this training are at a disadvantage.

TABLE 14

RECOMMENDED COMMUNICATION IMPROVEMENTS

Implement a LAN between the two organizations.

Establish or upgrade teleconference capabilities.

Encourage functional areas to conduct frequent teleconferences between centers.

Develop strategies to effectively use TDY budgets.

Update mail distributions.

Establish or upgrade facsimile capability.

Use a facilitator during initial planning meetings.

3. Consider the sizes of the organizations merging, the program's life-cycle stage, and the organizations' geographical locations when determining the synthesis mode or merger approach.

4. Realize, at the outset, that cultural differences do exist. Expect to learn about the other center's culture and encourage your counterpart to learn about your culture.

5. Consider implementing an Integrated Product Team management approach.

6. Consider implementing a single joint CCB.

7. Delay developing new organization charts until the program's processes have been adequately analyzed.

8. Involve the working level in developing the transition. Although significantly more guidance will be provided to future programs implementing IWSM, there will still be some room for creativity.

9. Realize that financial management may require added attention during the transition.

10. Be prepared to accept that IWSM may not result in any changes to a functional area. Some personnel have unnecessarily expended time and resources despite the results of process analyses which indicated that no changes were needed.

Headquarters Staff. The following recommendations are provided to the staff at HQ AFMC:

1. Continue maintaining the IWSM bulletin board. This should be done not only to share problems experienced by the pilot and other programs, but also to share the solutions to these problems. The bulletin board is also a convenient, "paperless" way of distributing relevant information.

2. Construct an initial IWSM orientation presentation. This presentation should be provided to working level personnel at each center. Continue to distribute IWSM videos and perform Road Shows. It is essential that the IWSM philosophy be understood by the working level. HQ AFMC should encourage any opportunity which promotes this understanding.

3. Ensure that adequate TQM training is available at the centers. IWSM implementation throughout AFMC may cause an increase in demand for this type of training.

4. Develop a standard structure for the relationship between DACs and PEOs. During the pilot-programs' transition, some programs developed MOAs to satisfy their need. As IWSM becomes more a rule than an exception, a standard structure will prevent the DAC from facing different types of relationships with different PEOs.

<u>Future Research</u>. The following topics are recommended for future research:

1. What metrics should be used, if any, to determine when the single manager should transition from a Product Center to an ALC?

2. How will IWSM affect the "colors of money." Many personnel have suggested that a single type of money be developed. Is this possible?

3. Do programs with a single manager located at an ALC implement IWSM differently than the programs examined in this thesis?

4. Conduct further research regarding the applicability of both the influencing factors and facilitation strategies to IWSM implementation.

5. Study the effects IWSM has had on weapon system users. Has IWSM met its goal of providing a single face to the user? Has IWSM improved weapon system management from a user perspective?

Summary

This study provided an independent, in-depth assessment of how IWSM was implemented by a sample of four of the twenty-one pilot programs. The most significant lessons learned by the sample programs were to establish a direct chain of command and to use Total Quality Management principles. Program business practices were changed by increasing Product Center/ALC interaction and implementing a single joint Configuration Control Board. Program personnel obtained useful guidance from the information products distributed by HQ AFMC and from other IWSM programs. Communication improvements, implemented by the programs, included increased teleconference capability and establishment

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of a Local Area Network. Cultural differences between centers,

insufficient initial guidance, and "rice bowl" mentalities were the most

significant hurdles encountered by the sample programs. An examination

of specific functional areas revealed that: contracting officers may

expect opportunities to improve contract management; financial managers

need to provide increased funding visibility to the single manager; and

program managers should expect to change their approach to system life-

cycle management.

The results of this analysis will be provided to the IWSM

Implementation Plans Working Group for inclusion into the IWSM

Implementation Guide.

Appendix A: Definitions

ACO: Administrative Contract Officer.

ACSN: Advance Change Study Notices.

AF: Air Force.

AFCC: Air Force Communication Command.

AFLC: Air Force Logistics Command.

AFMC: Air Force Materiel Command.

AFSC: Air Force Systems Command.

ALC: Air Logistics Center - Air Force center for system support - Oklahoma City ALC, Tinker AFB OK; Ogden ALC, Hill AFB UT; San Antonio ALC, Kelly AFB TX; Sacramento ALC, McClellan AFB CA; Warner-Robins ALC, Robins AFB GA.

AMC: Air Materiel Command.

APDP: Acquisition Professional Development Program.

APTS: Acquisition Program Tracking System.

ARDC: Air Research Development Command.

ASC: Aeronautical Systems Center.

ASD: Aeronautical Systems Division.

CCB: Configuration Control Board.

COD: Cost of Operations for Depot.

CONOPs: Concept of Operations.

Core Processes: The set of processes that encompasses all current AFSC, AFLC and AFCC military system management activities. These are Requirements, Financial Management, Contracting, Test Management and Evaluation, System Engineering/Configuration Management, Technology Insertion, Logistics, Integrated Weapon System Manager (Roadmap II, 1991).

Cradle to Grave: The life-cycle of a system from concept to retirement.

DAC: Designated Acquisition Commander.

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DBOF: Defense Business Operating Funds.

DCMAO: Defense Contracting Management Administrative Offices.

DDN: Defense Data Network.

DLA: Defense Logistics Agency.

DMR: Defense Management Review.

DPML: Deputy Program Manager for Logistics.

DSC: Data Source Code.

DSMC: Defense Systems Management College, located at Fort Belvoir, VA.

DSN: Defense Switching Network.

DT&E: Developmental Test and Evaluation.

ECP: Engineering Change Proposal.

ESC: Electronic Systems Center.

ESD: Electronic Systems Division.

FMS: Foreign Military Sales.

FOT&E: Follow-on Operational Test and Evaluation.

Functional Manager: Manager of a core process within a System Program Office.

FY: Fiscal Year.

HQ: Headquarters.

ICS: Interim Contract Support.

ILC: International Logistics Center.

IPDT: Integrated Product Development Team.

IPT: Integrated Process Teams.

IPWG: Integration Planning Working Group.

IWSM: Integrated Weapon System Management.

Joint-STARS: Joint-Surveillance Targeting and Reconnaissance System.

JPO: Joint Program Office.

LAN: Local Area Network.

LANTIRN: Low Altitude Navigation and Targeting Infrared for Night.

LOA: Letter of Agreement.

MAJCOM: Major Command.

Military Systems: The generic phrase used to describe the systems (including weapons systems and commodities) developed and supported by AFMC.

MIP: Material Improvement Program.

MOA: Memorandum of Agreement.

OPR: Office of Primary Responsibility.

OT&E: Operational Test and Evaluation.

PAT: Process Action Team.

PCS: Permanent Change of Station.

PEO: Program Executive Office.

PIT: Process Integration Team.

PM: Program Manager.

PMD: Program Management Directive.

PMRT: Program Management Responsibility Transfer - The transfer of system management responsibility from AFSC to AFLC.

POM: Program Objective Memorandum.

PQDR: Program Quality Deficiency Report.

Product Center: (formerly Product Division) Air Force center for system development - Aeronautical Systems Center, Wright-Patterson AFB OH; Electronic Systems Center, Hanscom AFB MA; Human Systems Center, Brooks AFB TX; Space Systems Center, Los Angeles AFB CA.

Process Owners: HQ AFLC and HQ AFSC deputy chiefs of staff for each of the core processes, includes - AFLC/XR and AFSC/XR (Requirements and Management), AFLC/EN and AFSC/EN (System Engineering), AFLC/FM and AFSC/AC (Financial Management), AFLC/XR and AFSC/DR (Test and Evaluation), AFLC/PK and AFSC/PK (Contracting), AFLC/LG and AFSC/DR (Logistics) (Abrams, 1991).

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RFP: Request For Proposal.

RSD: Replenishment of Spares for Depot.

PTO: Participating Test Organization.

RTO: Responsible Test Organization.

SAC: Strategic Air Command.

SAF: Secretary of the Air Force.

SAIP: Spares Acquired In Production.

SAPM: Security Assistance Program Manager.

Seam/Seamless: The transition of system responsibility from the developing agency (Product Center) to the support agency (ALC).

Single Manager: System Program Manager - That individual in an AFMC SPO who is ultimately responsible and accountable for decisions and resources in overall program execution (Roadmap II, 1991).

SPM: The system Single Manager.

SPO: System Program Office - The integrated AFMC organization responsible for cradle to grave military system management (Roadmap II, 1991).

SSD: Space Systems Division.

TAC: Tactical Air Command.

TDY: Temporary Duty.

TEMP: Test and Evaluation Master Plan.

TMC: Test Management Council.

TOMA: Technical Order Management Agency.

TPS: Test Pattern Set.

TQM: Total Quality Management.

USAF: United States Air Force.

VTC: Video Teleconference.

VTCN: Video Teleconferencing Network.

Appendix B: Initial Questionnaire

Mr Pansza, Les and I would appreciate if you could forward the attached message to the IWSM program offices. We are trying to select programs for case studies. We expect that we will receive a better response if they recognize your name. Thank You.

Two AFIT graduate students are doing their master's thesis on the IWSM process and transition. It is their intent to select several programs for case studies. In order to group the programs for their selection they request your assistance in answering the following four questions:

1. Had your program performed PMRT prior to IWSM implementation?
    (Yes/No/In-Process)

2. Is your program categorized as a major or non-major program?
    (Maj/Non-Maj)

3. What are your approximate manning levels (military/gov't) at each office location (for example: there are 305 people at ESD and 166 people at OK-ALC working on the E-3)?

4. Does your program involve Foreign Military Sales or a joint venture with another country? (No/FMS/Joint)

Please forward responses to Capt Scott Dalrymple, AFIT/LSG (student):

        dalrympl@wpdis01.hq.aflc.af.mil

A response by 23 Jan 91 is requested.

Appendix C: Interview Questions

NON-ATTRIBUTION STATEMENT

Statements made during these interviews will not be attributed to any person by name. Statements will be attributed to programs and may be attributed to functional areas. Participation in this interview is entirely voluntary.

INSTRUCTIONS

These are the questions that we will ask you during your interview. They are provided to you in advance to allow you to prepare your responses. You are encouraged to make notes which you may want to use during the interview. We will not be collecting any written responses from the interviewee.

In order to accurately collect your responses and to minimize the length of the interview, we intend to tape record the interview. If this is not satisfactory, please notify us immediately so we may adjust our methods.

We hope that you will help us take full advantage of your individual IWSM expertise and that you will find the interview to be a pleasant experience.

CONTRACTING QUESTIONS

1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

3. What guidance and external expertise truly benefitted your IWSM implementation effort?

4. What specific strategy(ies) have been established to enhance communication/ control with the geographically separated part of your contracting organization?

5. What were the major "hurdles" that you encountered during the IWSM transition?

6. How has IWSM affected the government/contractor relationship with your contractors? How has the transition impacted any of your programs contracts? Any contractual cost/schedule impacts?

7. How has IWSM changed your use of the Defense Contracting Management Administration Offices (DCMAO)?

ENGINEERING QUESTIONS

1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices" helped you the most during the transition?

2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

3. What guidance and external expertise truly benefitted your IWSM implementation effort?

4. What specific strategy(ies) have been established to enhance communication/ control with the geographically separated part of your engineering organization?

5. What were the major "hurdles" that you encountered during the IWSM transition?

6. How will the merger affect the working relationship between a weapon system program office and its associated commodities program offices?

7. To what extent has the merger increased the involvement of Air Logistics Center (ALC) Quality Assurance engineers into Design/Development activities?

8. How has the merger affected the membership of the Configuration Control Board? How has it affected the manner in which the CCB is conducted?

9. What are the roles and responsibilities of the engineering function for your program at each center (ALC/Product Center (PC); please respond regarding both locations)?

FINANCIAL MANAGEMENT QUESTIONS

1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

3. What guidance and external expertise truly benefitted your IWSM implementation effort?

4. What specific strategy(ies) have been established to enhance communication/ control with the geographically separated part of your financial management organization?

5. What were the major "hurdles" that you encountered during the IWSM transition?

6. What interim procedures have you used to manage program funding during the IWSM transition until a final solution is found to the "Total Program Funding" issue?

7. Describe the problems (and their solutions) you have encountered regarding the applications of 3600, 30XX, 3400, or other appropriations during the IWSM transition.

8. How has the merger affected the reporting of manpower costs? (against program vs. against Product Division/ALC?)

MANAGEMENT QUESTIONS

1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

3. What guidance and external expertise truly benefitted your IWSM implementation effort?

4. What specific strategy(ies) have been established to enhance communication/ control with the geographically separated part of your management organization?

5. What were the major "hurdles" that you encountered during the IWSM transition?

6. How has IWSM affected the management of your Program Objective Memorandum (POM):
       a) 92-94 POM years
       b) 94--> POM years

7. What are the roles and responsibilities of a Single Manager?

8. How has the IWSM transition affected management of the Program Management Directive (PMD)? Has the PMD been updated since the transition? In what ways has it been updated?

9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

TEST QUESTIONS

1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

3. What guidance and external expertise truly benefitted your IWSM implementation effort?

4. What specific strategy(ies) have been established to enhance communication/ control with the geographically separated part of your test organization?

5. What were the major "hurdles" that you encountered during the IWSM transition?

6. How has IWSM affected the roles and responsibilities of the test divisions at each location (ALC/PC)?

7. How has IWSM affected the composition of system or subsystem test teams?

8. How have Test and Evaluation processes (Test and Evaluation Master Plan updates and reviews, Contractor Test Plan/Procedure reviews, etc.) been affected by the IWSM transition?

9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

Appendix D: F-16 Research Findings

Contracting Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- Initial thrust for IWSM was very poor. There was very little direction at start. Better notification or explanation from the beginning would have helped.
- It became just another task in a very busy organization at start. It was another job to fit in the schedule.
- Saw a lot of "rice bowls" form.
- Saw instances where people developed different interpretations of General's direction and policy rather than go up the chain for clarification.
- Internal direction was to develop new processes "as if you were king."
- There were two types of people: Free thinkers who liked the opportunity to be original and people who like to go by the numbers. It took a while to adopt "if you were king" philosophy.
- Initial attempts were created in a vacuum. Didn't know if "they were going to shoot or salute."
- The best practice to help the transition was the Total Quality training that had been provided previously.
- The contracting functional area is always being measured (Purchase Requests processing, Audit turnaround, etc.), so it became very natural to analyze the processes. The initial meeting with ALC counterpart involved describing all processes on butcher paper and wrapped them around the room, one over the other. This allowed a comparison of the processes at the two different organizations. The first time this was done it took five days.
- Found that there were two different cultures. Both act in according to the Federal Acquisition Regulations. But Ogden also acts in according to AFLC and Ogden ALC supplements while ASD responds to AFSC and ASD supplements.
- Disparity exists in dollar values and number of contract actions every year. Ogden would process up to 10,000 actions per year while ASD only processed about 1,000. However, ASD would obligate over 3 billion dollars per year while Ogden would obligate much less.
- ASD/YP contracting has clearance authority of up to $25M while Ogden counterpart clearance was $10M.

ALC Interview Response:
- Specific direction on what the organization should look like from the Steering Committee would have helped. They had a vision for the organization that did not match that of the Steering Committee and

had to start over.
- Total Quality Management training helped during the transition. Also, training in flow charting, process flows, and facilitating.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- IWSM has eliminated an "us" and "them" point of view.
- Pre-IWSM, Ogden had been responsible for F-16 A and B versions and ASD were responsible for the F-16 C and D. ASD/YP also has a contract with a changes clause which was used when a modification was needed to make modifications for all versions of aircraft. Often the transfer of money from Ogden to ASD/YP to definitize the contract was late. ASD/YP contracting was burdened with extra management, trying to get the money, for aircraft outside of their primary responsibility. Now, with IWSM, they can do these things better.
- ASD contracting "home office" did not want ASD/YP contracting to do Ogden contracting work.
- The old process to get funds for a modification involving retrofit to
F-16 FMS aircraft:
      -- ASD/YP contracting requests to program control
      -- Program Control writes a letter to Ogden/IAI (International Programs office)
      -- Ogden/IAI writes a letter to Ogden Financial Management
      -- Ogden/FM writes a letter to International Logistics Center (ILC; at Wright-Patterson)
      -- ILC then collects the money from the appropriate countries
      -- Money would then go back through the same route to ASD/YP contracting
This process was not understood until examined for IWSM. The process has not yet been formally changed but is being analyzed for improvement. Informally, ASD/YP talks to the various links in the chain.
- In the old process, any one of 10 people in the financial process could say no to stop the process. Now it only takes one person to say yes.

ALC Interview Response:
- Envisioning greater changes in the way they contract after IWSM is complete. Totally different.
- Approvals/Reviews through different procedures.
- Previously worked under the DAC chain. They are preparing to work under the PEO chain.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- Talked often with a senior AFSC contracting executive. Discussed

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philosophy of changes informally. Able to get the pulse and benefit of the command level perspective.
- Noticed that a difference exists between PEO and non-PEO programs. There is a different review chain. A non-PEO program uses services (reviews) from the ASD contracting staff. A PEO program can opt to use the services from the staff at the command headquarters. This allowed greater insight into the command level vision.
- Best guidance was utilizing "if you were king" theory.

ALC Interview Response:
- The Steering Committee Roadshow provided the most significant help. After viewing what had already been accomplished, specific guidance and direction was provided to help develop their organizational structure.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your contracting organization?

Product Center Interview Response:
- On the phone with counterpart between 3 times a day to 3 times a week.
- Established a telecon once a week.
- F-16 program is establishing a Local Area Network so that computer files and Electronic Mail can be shared with Ogden counterparts in the same way as with workers at ASD.
- The Configuration Control Board (CCB) is now held in a joint environment via telecon with Ogden.
- ASD/YP trying to get FAX machines for each functional office.
- The contracting data bases for AFSC and AFLC are very different. This incompatibility issue is being worked but has not been solved. ASD/YP has an open issue on the IWSM bulletin board. He has received pressure to close the issue, but will not do so until a useable solution is implemented.

ALC Interview Response:
- Regular telecon staff meetings take place.
- Video telecon capability is expected soon. This will help a great deal for Acquisition Strategy Panels and similar efforts.
- Local Area Network capability is being established. The new capabilities will help with coordination with the other functional areas.
- Normal telecon activity takes place.
- Enabling the computers to talk to each other will increase the amount of shared information.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Determining what each organization did and what the new organization would look like.
- The biggest was developing communications between organizations.

- Determining whether to operate as a DAC, as Ogden has, or a PEO organization, as ASD/YP has.
- There appeared to be a concern at Ogden that IWSM would eliminate jobs or usurp authority. This caused development of "rice bowls" in an attempt to maintain positions and authority.

ALC Interview Response:
- One major hurdle is the fact that all of the regulations have to be changed. Some new regulations are starting to be provided. An example is AFAC 90-7 which establishes the management chain to be used (DAC or PEO) is currently being drafted by AFSC.
- Lack of implemented policies and procedures.

Investigative Question 6. How has IWSM affected the government/contractor relationship with your contractors? How has the transition impacted any of your programs contracts? Any contractual cost/schedule impacts?

Product Center Interview Response:
- There have been no cost or schedule impacts to any contracts.
- One aspect of IWSM which is a genuine improvement is that the prime contractor can no longer play one command against the other. Previously, the contractor would establish a set of ground rules with one command and try to make the other accept them as well. Likewise, if a progress payment was withheld due to lack of progress by ASD/YP, the contractor would stop working on Ogden issues until ASD/YP started payments again. Now, if there is a lack of progress, both ASD and Ogden stop progress payments.
- Ogden had overbought radar units and was preparing a Termination for Convenience. This would have lost money. Meanwhile, ASD/YP was working a FMS buy for which radar units would have been a long-lead item. By communicating with Ogden, the termination was not implemented and the radar units were used for the new contract. This saved money on one program and time on the other.
- Increased awareness through better communication.

ALC Interview Response:
- The contractor is now anticipating a single point of contact for all contracting issues. This is not going to happen. Centers will be talking to each other but each center will be doing own pricing and negotiating.
- IWSM has impacted programs due to the need to ask questions regarding what reviewing chains to use. However, in the long run, no actions have been slipped or faced additional cost.

Investigative Question 7. How has IWSM changed the use of the Defense Contracting Management Administration Offices (DCMAO)?

Product Center Interview Response:
- There has been no change in the use of DCMAO due to IWSM.

ALC Interview Response:
- Have not seen any change in use of DCMAO.

- Foresees a possible change, as the IWSM transition completes, in getting a consolidated position from DCMAO during contract closure.

Other Issues:
- Has pushed for a single clearance authority for the F-16 program, rather than one level at ASD and a lower one at Ogden. They have just received authorization to delegate clearance authority to counter-part.
- Has seen an increase in workload at ASD/YP due to IWSM. Has not seen a decline in any of the contracting metrics.
- There are currently 107 people in contracting in Ogden today. This is expected to drop to 50-60 by 1995. ASD/YP will not be getting any additional resources to cover any work that is transferred from Ogden.
- AFMC is preparing to publish AFMC pamphlet 800-60, which will be the cookbook on IWSM. Some concern that its size, over one inch thick, will intimidate managers from picking it up and reading it.

Engineering Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices" helped you the most during the transition?

Product Center Interview Response:
- Tended to do things in a "stove-pipe" fashion. There was little cross-flow between PATs.
- Single Manager's foreseeing turf battles, refused to let anyone make organization charts until after processes were well defined.

ALC Interview Response:
- Better overall communication up-front.
- Try to accomplish the given workload while trying to implement IWSM.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- Day to day practices have not changed significantly to casual observer.
- From management perspective, great increase in emphasis on coordination and communication with the separate location.
- Trying, with success, to include Ogden counterparts in more meetings and travel.
- CCBs are fully integrated now.
- Engineering meetings now with counter-parts.
- Structure changed by having chief avionics engineer at Ogden report to chief avionics engineer at Wright-Patterson. More tricky with support equipment, at Ogden a matrix manages SE for more than

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one aircraft, no direct counter part.
- Ogden engineer counter-part manages "care and feeding" of engineering (all F-16?) efforts ("line manager").

ALC Interview Response:
- Previously was chief of engineering for F-16 A/B aircraft. Now decisions are made somewhere else.
- Report functionally to the "SPO", but work from local area.
- Increased workload but requires double the coordination.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- There was no guidance at the start. The PATs were behind their efforts.
- Organization did not line up with PAT structure: Tech Insert in Engineering (for example)
- Biggest outside guidance was more hinderance than help - restriction from making Ogden supervisors report to Single Manager. Not as IWSM'd as they would like.
- Fear of further PAT developments forcing them to change what they have done.

ALC Interview Response:
- Absolutely none.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your engineering organization?

Product Center Interview Response:
- Going in position: "We've got to see these guys." But video teleconferencing is not working yet, except for a few applications. Ahead of the technology.
- Improving other types of communication: Computer E-Mail (putting their own LAN in, the DDN is not sufficient, able to send more than just text), increasing number of FAX machines, two staff meetings a week-one with Ogden, don't save issues for meeting-frequent telecons, quarterly meetings face-to-face (alternating locations and hosting organization writes minutes)
- Noticed that both Ogden and WP were preparing a briefing for a foreign customer and consolidated it using engineers from both locations.
- Developing Program Quality Deficiency Reports (PQDRs).
- Communicating in a timely manner.

ALC Interview Response:
- Established weekly staff meetings by teleconference. Upheld "religiously." Information is FAX'd a couple of days in advance of the meeting. Has been a good communication source.
- Meet quarterly face-to-face.
- Attends semi-annual program meetings at the contractor's plant.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Biggest single hurdle: speak different language. Like Americans and British. Use the same words to mean different things.
- Drew a lot of Venn type (bubble) diagrams and found they were using same words but when they dug deeper found that they meant different things.
- Anticipated hurdle: System command tends to use higher grades in positions than AFLC; has not been a problem.
- Fairly easy at ASD to move people within matrices (EN). AFLC does not have this, in order to move to another position, they have to quit and get rehired.
- Funding: AFSC delegates funding responsibility much further down. AFLC has not allowed people to manage funds. Difficult to get the right people on TDY's, tendency to try to send substitutes, not acceptable. This will continue to be a hurdle until Single Manager has control of total budget.

ALC Interview Response:
- The barriers of workers at the bottom level who have to learn to work together. Some people have a perception on how they want to work and it is not compatible with other people's perceptions.
- Have found that in some cases it is OK to disagree.

Investigative Question 6. How will the merger affect the working relationship between a weapon system program office and its associated commodities program offices?

Product Center Interview Response:
- Commodities have always been a problem. Commodities have a different command structure. Non-responsive to weapon systems.
- Have had problems in past, sees nothing in IWSM to solve these problems.

ALC Interview Response:
- It will slow down the process in that there is now an extra step to coordinate work with commodities with the ASD office.
- This could be overcome with empowerment to the ALC office. This will probably evolve after a level of trust is built up.

Investigative Question 7. To what extent has the merger increased the involvement of Air Logistics Center (ALC) Quality Assurance engineers into Design/Development activities?

Product Center Interview Response:
- IWSM has not saved any manpower, in fact there is more for existing people to do with IWSM taskings.
- Hope to get more ALC Engineers involved in design when it is possible.
- Still sorting out organizations to the point where this will be

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possible.
- Will need to continue communication improvements.
- Getting "downstream expertise" involved into early design efforts.

ALC Interview Response:
- There is still a learning process going on involving educating the ASD engineers on what is involved in supporting systems.
- It appears that the acquisition side views the user as more remote while the ALC engineers feel the "heat" from the customer.
- Real benefit is the process of educating what is involved in fixing the weapon system from a user/customer perspective.

Investigative Question 8. How has the merger affected the membership of the Configuration Control Board? How has it affected the manner in which the CCB is conducted?

Product Center Interview Response:
- ALC have not done CCB's the way AFSC does them. They do more boards at different stages of mod development.
- Tech Director has, and still does, chair the CCB.
- OPR is responsible to make it all come together. A very structured procedure exists.
- Main change is that there is a single CCB. Ogden has representatives. Briefer may be at either end. This meeting does use video conferences.
- Process is slowed down a bit but seems to be worth it.
- Ogden held CCBs as needed, Wright-Patterson has weekly CCBs.
- Says that Ogden will say that Wright-Patterson is getting in their way.
- Their process was more responsive for what they did, this is increasing their work load.
- Has been a brutal evolution.
- Distance slows process but new methods should improve operations.

ALC Interview Response:
- The logistics organization at Ogden are not members of the new CCB, only product support, engineering, and the YP people.
- There is no longer any involvement with previous members.
- Initially there were problems when Ogden was given less than a day to review data for CCB.
- Membership is chaired by "SPO", located 2,000 miles away.

Investigative Question 9. What are the roles and responsibilities of the engineering function for your program at each center (ALC/Product Center (PC); please respond regarding both locations)?

Product Center Interview Response:
- Wright-Patterson: System integration, center for system integrity (ASIP, MSIP, AVIP, and others)
- Found redundancy in Store Certification (pods and weaponry configurations being carried and what you can do with them)
- Ogden's primary interest is in retrofit mods and depot activities.
- Both have responsibility in user support-trying to consolidate

efforts, as well as shared responsibility for training.
- Were going to have a single point of contact, instead establishing a focal point list. Example: had two engineers set up a training course to provide familiarization training on some new equipment.
- Some times when Ogden looks at replacing obsolete system components, they may take advantage of the latest technology. Example: throttle sleeve replaced with teflon impregnated material to reduce chaffing-team effort, largely at Ogden.

ALC Interview Response:
- Functionally aligned to report to ASD F-16 engineering.
- Roles and responsibilities are still the same as before in supporting A and B model aircraft. There has been a removal of some of the decision making authority.
- Views ASDs role basically as acquisition and decision making authority with the "ALC" assuming a more subordinate role.

Financial Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- Could not start with a clean slate. As a given, the starting point included ALCs and Product Centers.
- Example: Former AFSC commander tried to move approximately 100 people from Eglin to Wright-Patterson and received significant resistance.
- At the start, they did not know their counterparts at Ogden. That has changed.
- Original perception was that they could develop their own processes with little or no interruption.
- Relationship with the Process Action Teams was a little rough at first. At first F-16 started before the PATs were really started. When the PATs were on-line they developed processes. The processes that were the same as those already developed by the SPO were considered (by the SPO) to be a result of TQM, those that were different were considered to be directive in nature.
- There was an interchange between the SPO financial management personnel and PAT members. The two-way exchange helped both sides. The SPO provided some views that were later implemented by the PAT. They also received an understanding of how the PAT operated and some of their philosophy.
- There would probably have been more benefit if the meeting between the PAT members and the SPO personnel had happened earlier. The first meeting with the PAT occurred in Oct 91.

ALC Interview Response:
- Have had a pretty smooth transition.
- Have had good working meetings looking at both sides to determine what was the same and what was different.

- It would have helped if it was known up front whether a DAC or PEO was going to be in control of the money and the weapon system.
- The best practice was getting the working level people involved.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- The single manager is now in control of all retrofit funds.
- IWSM is not nearly the significant change that Total Quality Management is. TQM is a far more basic thing than IWSM. IWSM would have been several magnitudes more difficult if TQM was not in place. IWSM may have been another reinforcement for TQM.
- There is now a larger picture of the program and a better relationship with the people at Ogden.
- In the past, Ogden would receive some retrofit money and ASD would receive some. Neither would know how much the other had. Now all of the retrofit money comes to the single manager. Retrofit money that is needed at Ogden is sent via AF Form 616.
- Looked at all funds and split it into two groups: money which was more appropriate for ASD and money which was more appropriate for Ogden ALC. Arrangements were then made to have these funds supplied to the appropriate locations.

ALC Interview Response:
- Have to report in two directions: LA at the ALC and YP at the product center. This caused some changes.
- Some fundings are controlled by a DAC and some by a PEO, this caused some changes.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- ICS spares are now funded using 3010 money instead of 3400 as was funded before, this provides flexibility.
- Other changes to uses of different appropriations helped.

ALC Interview Response:
- There were no external experts.
- Started from scratch and started becoming the experts.
- The program director may have received some guidance which would have been passed down.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your financial management organization?

Product Center Interview Response:
- Meet in face-to-face meetings every couple of months.
- Have pursued VTC capability but is on hold for the time being.

- Have a YP staff meeting every week. Thinks it might be frustrating for the people at Ogden.
- YPP also has a smaller staff meeting every week using teleconferencing. This appears to be very successful. One of the concerns at the start was "what are we going to talk about?" There has never been a problem finding something to talk about. This also provides a sense of identification of the team members.
- Recently set up a LAN which links all of the F-16 people at ASD and this will be expanded to include Ogden.
- It has been necessary for ASD to provide funding to their Ogden counterparts for things like TDY and computers. There appears to be a "rich uncle" syndrome developing. When upper management at Ogden has a very scarce level of resources to spread over a number of programs, they tend to provide less of it to the F-16 people because they know that ASD can fund them.
- Have noticed a sense of corporateness. People now say "we" instead of "us" and "them."

ALC Interview Response:
- Now holding weekly staff meetings using telecons. Staff notes are exchanged.
- A local area network is being established between the two organizations.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Management of financial cases has been a problem. In the past, some cases were provided to AFSC and some to AFLC. There has been a philosophically different approach to financial management. AFLC has more centralized control of funding, whereas AFSC has a decentralized control of funding. The role of the International Logistics Center (ILC; part of AFLC) has not been worked out yet. Sorting out how foreign cases will be managed has been very slow to work out.
- Identification of the USAF funds flow. Initial spares were going to be sent to ASD. It was felt by YPP that this was inappropriate. It is now sent directly to Ogden but still comes under the purview of the PEO.
- There are other changes in processes that are on-going (DBOF) for example, which confuses some of the IWSM issues.

ALC Interview Response:
- Spent a lot of time trying to change the colors of money. This was something that they couldn't resolve without help from higher levels. This help was not available.
- Some types of money are only applicable after PMRT. Now that PMRT is not a part of the life cycle anymore, new guidance is needed on how or when this money can be used. An example was provided:
    -- There is a fund cite called engineering services money (583 type money which a category of 3400) while the SPO uses 3600

for the same type of purpose. At the ALC, 3600 cannot be used like this after PMRT. Now that PMRT is not a factor, they did not know if they could still use 583.

Investigative Question 6. What interim procedures have you used to manage program funding during the IWSM transition until a final solution is found to the "Total Program Funding" issue?

Product Center Interview Response:
- The guiding principle has been to align the financial management with the program management. If one center has primary responsibility for getting a job done, they should receive the money directly. The financial PAT has upheld this approach.
- There are certain funds that are not briefed back at ASD. If there is a problem area, then Ogden will surface it. Single manager does not have direct control but knows who to call.

ALC Interview Response:
- Some funding, such as modification money, has been all moved back to the SPO where it is now controlled. The money is now sent directly to where the single manager resides. It will probably eventually be transitioned back. The ALC now only gets the modification money that is needed for the ALC to make modifications.
- Most areas things have not changed. Money that is under the DAC's control stays at the ALC. Money under PEO control stays with the product center.

Investigative Question 7. Describe the problems (and their solutions) you have encountered regarding the applications of 3600, 30XX, 3400, or other appropriations during the IWSM transition.

Product Center Interview Response:
- Life Support SPO is a test case where both centers share support funds.
- Sustaining engineering. There is talk of reappropriating funding from 3400 to 3600 to bring under the control of the single manager and increase his flexibility.

ALC Interview Response:
- Some other terms are needed to define when different appropriations can be used (see question 5 response).

Investigative Question 8. How has the merger affected the reporting of manpower costs? (against program vs. against Product Division/ALC?)

Product Center Interview Response:
- Not Applicable. The SPO does not see this type of money.
- There has been some talk of changing the current situation. But the view here is that this would probably not be appropriate in the SPO.

ALC Interview Response:
- Not Applicable.

Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- A good solid basis in TQM training and education were the practices that helped the most. A distinction is made between education and training. ASD made a commitment to TQM several years earlier. All personnel were sent to a course on what TQM is all about. That is the education part. Later, personnel started attending training classes on how to form Process Action Teams and Critical Process Teams. Personnel at Ogden had also been through similar training. This created an appreciation for needing to understand processes.
- When starting the IWSM transition each program was working in a "stovepipe" while the functional PATs worked across all programs. The programs and the PATs, many times, did not reach the same conclusions on how to change processes. It may have been helpful to receive more firm guidance with respect to these functional areas. The experiences from the pilot programs should be helpful for the remaining programs.
- Experienced some constraints in performing the transition. First, no personnel could be relocated. Second, the chain of command could not have any person report to someone at another geographic location. It becomes necessary to make some people report functionally but not formally to a counterpart at the other location.

ALC Interview Response:
- "If I could have been King for a Day." Would have moved everyone to a single location. This would have made communication smoother.
- Looked at everything that AFSC did and everything that AFLC did. Made a flow diagram of everything and tried to eliminate duplication of effort. Made assignment changes to eliminate duplication.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- Enhanced communication throughout F-16 program.
- Caused a reverse PMRT. This helped alleviate a very confusing management structure that existed when Ogden and ASD/YP were managing different configurations of F-16's.
- There is now only one Technical Order Management Agency (TOMA), at ASD/YP, rather than the two that existed previously.
- Previously had two CCBs with disconnects; now one CCB with action involvement.

ALC Interview Response:
- Now have a single CCB with one chairman.
- Only have one way of performing engineering.
- Only have one funding office for modification and procurement funds.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- The best advice was provided by talking to the F-15 program who had started the transition earlier.
- Factors that caused F-15 program to be helpful were both program similarity (both fighter aircraft) and existing personal relationships.
- To a lesser extent, the LANTIRN program was also consulted.

ALC Interview Response:
- Looking at programs ahead of them in the IWSM process helped some with the break-out of different procedures.
- Looked at private reorganization (Chrysler was mentioned as an example). Believes more examination of private enterprise should have been made. "How do you do things right the first time."

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your management organization?

Product Center Interview Response:
- Created a single CCB.
- Uses video teleconference (VTC) when possible.
- Using FAX more often.
- Shipped old personal computers from ASD/YP to Ogden when ASD/YP upgraded their computers.
- Expects to increase the use of video teleconferencing.
    -- Expansion or addition of video teleconferencing has been delayed while a command-wide decision is made on a standard type of VTC to be used.

ALC Interview Response:
- Teleconference staff meetings once or twice a week.
- In the process of setting up video teleconferencing.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- "Rice bowls" and communications were the two biggest hurdles.
- The term "rice bowls" is used to describe the parochial interests that people have. Rice bowls have been experienced both within the new organization at both locations and outside the organization in functional "home offices" (center or command level staffs).
- Communications problems were experienced when personnel from both

locations would say the same things but they would have different meanings due to the cultural differences. For example, the position of Security Assistance Program Manager (SAPM) held certain responsibilities at ASD and had a significantly different level of responsibilities at Ogden. They found that often they had to spell out detail definitions of the words that they used.

ALC Interview Response:
- When IWSM first started, there was a belief that they could do anything to make IWSM work. As they progressed, guidelines were provided. This caused some confusion. It would have been helpful if the guidelines had been provided at the start. Acknowledged that the senior leadership was probably learning at the same time.
- Have to increase a sharing of the vision to all of the people involved, not just the management in charge of implementing it.

__Investigative Question 6__. How has IWSM affected the management of your Program Objective Memorandum (POM):
a) 92-94 POM years
b) 94--> POM years

Product Center Interview Response:
- IWSM has helped consolidate management of all F-16 finances.
- There still exists a great number of different types of money managed by different locations. But now the single manager and his customer can get a broader view of F-16 finances.
- The user benefits.

ALC Interview Response:
- The budgeting process is in such a flux that it is difficult to determine whether or not IWSM has had any effect on it.

__Investigative Question 7__. What are the roles and responsibilities of a Single Manager?

Product Center Interview Response:
- Number one, is to present a single face to the user. This is difficult for F-16 because it has so many users.
- Appendix H shows three charts which were presented:
    -- The Single Manager Concept
    -- Acknowledged Dual Reporting
    -- The F-16 Program Reality
        --- There is now a single program manager who is required to be responsive to the same number of direction and guidance chains.

ALC Interview Response:
- Responsible to the customer to support needs.
- Responsible for engineering, configuration, support, support structures. All of these responsibilities fall under the single manager who delegates down to supporting departments or agencies.

Investigative Question 8. How has the IWSM transition affected management of the Program Management Directive (PMD)? Has the PMD been updated since the transition? In what ways has it been updated?

Product Center Interview Response:
- Only one change to PMD to reflect the new budget. This is not a result of IWSM.
- The new "IWSM PMD" is still being drafted. This will consolidate 8 or 9 PMDs into one. There is a great deal of coordination to make this happen.
- Until the new PMD is approved the Acquisition Program Baseline (APB) cannot be updated.

ALC Interview Response:
- A more structured program.
- IWSM has started the process of rolling all PMD class 4 modifications (Reliability and Maintainability or other follow-on modifications) into a single PMD. This then moves these from DAC oversight to PEO oversight.

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

Product Center Interview Response:
- None.

ALC Interview Response:
- IWSM causes a situation where technical direction comes from the single manager who is outside the ALC while "care and feeding" comes from organizations on base. These agreements still need to be worked out.
- There is still a need to deal with a number of other on-base organizations. They have to seek support from organizations who may respond differently when direction is coming from a different source. Have not had to change any agreements formally.

Test Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- If known far in enough advance, avoided PMRT and avoided dumping data and knowledge on PMRT'd configurations (A/B).
- Still completely "umbilicalled" to the contractor. Mind-set that we will always have a production line.
- About 13 SPO's have their "hooks" in the F-16 program.
- Very complicated funding at ALC.

- TQM useful practice in transition. Leadership has strongly supported. Leaders don't tell how to do, they ask low levels how to make this work. Many "doubting Thomas's" at the start. Take the process owners they tell you what is wrong and help you fix it. The fundamental reason that the transition is working.
- Still impediments to TQM, cultural thing. But this is changing.

ALC Interview Response:
- The transition has not been very drastic or overwhelming. Has not felt much effect.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- Integrated Product Development Teams (Concurrent Engineering). Interaction between designers, manufacturing, testers, maintainers. Example of F-4, 6 or 7 types of screws on one panel.
- Bring it all together and create a team focus. Create cross-flow of communication.
- Difficult to make happen due to diversity. About 20 different IPD teams exist.

ALC Interview Response:
- There is now another level in the management chain.
- They are now required to deal with the SPO more. Keep them involved in what they are doing, where they didn't have to before.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- Gen Yates and Gen McDonald had road show. Before starting; started talking and thinking about concepts, sharing the vision. (Colorless money, Seamless transition)
- Without sharing the vision of the leaders, lower levels can't carry it out.
- Development of IWSM Implementation Plan helped. Gone back a number of times to revise to get out the "rice bowl" mentality.
- Slashed "Because that's the way we've always done it." Human nature is to stay comfortable-adverse to change.

ALC Interview Response:
- Guidance came from two organizations: one from Ogden, one from ASD and tried to find commonality and differences.
- Did not see any real external guidance.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your test organization?

Product Center Interview Response:
- Cannot have people reporting to manager's in the other location with one exception. One individual at Ogden reports to Single Manager located at Wright-Patterson. All others report through Ogden DAC chain.
- Had to reorganize to make this new chain work. Give more authority to the one person who reports to single manager.
- Had been an earlier re-org which did more damage than good.
- Every couple of months get together to discuss internal (to F-16) issues.
- Frequent TDY is painful. Trying to do more Video Teleconferencing but it is expensive and expanding capability is on hold until a standard is established to avoid incompatibility.
- Increase telecons. Weekly telecon staff meetings. Phone lines need to be improved.
- Expanding FAX capability. Be able to share pictures real time. Adding FAX machines so that every functional office has a machine.
- Increasing use of E-Mail. ASD just upgraded computers to 386 computers (Novell network, Windows) while Ogden still using Z-100's. Packed up old Z-248's and sent to Ogden. Trying to get to where more than just text files can be shared.

ALC Interview Response:
- Increased use of FAX machines and Electronic Mail.
- Also have increased communication by telephone.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Cultural Differences, Different focus (for good reasons).
- 2000 miles of displacement.
- Ogden work 10 hr work days and take every other Friday off.
- Fundamental hurdle, education differences. Systems Command has tried to get people through classes. Still send people to training after they have been working for a year or so. APDP helps. Also Acquisition fundamentals course for new 2Lts. Bigger hurdle at AFLC, they have not been taking acquisition courses.
- No Test Pilots (test pilot school graduates) at Ogden. Three fine pilots but not graduates of test school.

ALC Interview Response:
- Biggest hurdle was to learn what the other organization did and to get them to understand what they did on a day-to-day basis. It took a while to sort out roles.

Investigative Question 6. How has IWSM affected the roles and responsibilities of the test divisions at each location (ALC/PC)?

Product Center Interview Response:
- There was no specific flight test division at Ogden. No test training at Ogden.

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- They were dealing with smaller system mods ($1-2 M) and using mostly government resources while ASD is dealing with a $90 M test budget.
- ASD manages test resources at Wright-Patterson, Edwards, Eglin, Fort Worth (GD), Nellis (FOT&E), Tuscon (Reserves).
- 40% of all test activities in the Air Force.
- Trying to develop centers of expertise at different centers. Try to phase GD out.
- Try to get away from parochialism of different test centers who are competing for funding.
- Past: RTO would exclude other PTO's (other test centers) and lose the benefit of their expertise.
- Roles and responsibilities haven't change but with change of focus there is a greater sharing.
- TEMP used to be a dust collector and changed only once a year, not useful. Now trying to change TEMP as needed (either 5 times a year or once every 5 years)-make it useful. Put responsibilities in Section 2. Not an explicit part of IWSM but influenced by IWSM philosophy.
- TEMP is limited by regulation to 30 pages. This is too short to adequately describe the test programs for 60 different configuration aircraft. F-16 needs some interim level master test plan between the TEMP and the individual test plans. Planning on developing Block Test Plans. Some of which Ogden will be primarily responsible for developing because they have the expertise on those configurations.

ALC Interview Response:

- There is now one single point of contact.
- Roles and responsibilities have stayed essentially the same. There is just an additional layer of reporting.

Investigative Question 7. How has IWSM affected the composition of system or subsystem test teams?

Product Center Interview Response:
- Acquisition Memorandum 91-014 Secretary Welsh: Doing too much DT&E in a sterile environment. Need to look at OT&E things early during DT&E, when you can make a change and a cost savings.
- DT&E typically focuses on such detail that it does not test if the system is practical for the user. What they are doing is adding "Integrated Systems Evaluation" in testing. OT&E types of things done with DT&E pilots and instrumentation.
- F-16 production line is very expensive to stop. It is very important to catch "show-stopper" problems before they are being incorporated in production.
- When "show-stoppers" are found they lay on the table with user and decide what to do: stop production line and pay, find work around, etc.
- TQM metrics look at fundamental process: requirements (serial), planning (serial), test plans, test results (parallel), interface with design and engineering functions (somewhat parallel to others).
- Emphasis on new attempts to feed test results back into process as

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fast as possible. Don't want to just make historical documents, but get results back to designers to prevent implementing problems or designing the same problems over again.

ALC Interview Response:
- Has not had much of an effect. There may be some change in working with other test organization such as Edwards and Eglin.

Investigative Question 8. How have Test and Evaluation processes (Test and Evaluation Master Plan updates and reviews, Contractor Test Plan/Procedure reviews, etc.) been affected by the IWSM transition?

Product Center Interview Response:
- Test Management Council: Schedule and Resource management working group. Gets participants from all of the test centers and look at near and long term schedules. Tracks all test aircraft by tail number and examine what they are being scheduled for and in what configuration they need to be set. Look over a 2 year time period. Have to look at contractual obligations. Meets every 3 months. Not a result of IWSM but expanded due to IWSM.
- TMC also used to review TEMP. AFLC never required to generate a TEMP. Necessary to re-incorporate the previously PMRT'd configurations back into TEMP.
- Sometimes doing similar but different things at different locations because there just are not enough resources. Coordination is necessary to ensure that when parallel effort are happening at different locations results and problems are shared.

ALC Interview Response:
- A TEMP did not exist previously for the A and B models. They are now being included.
- The SPO is now involved some with reviewing organically developed test plans and procedures.

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

Product Center Interview Response:
- Trying to develop a "TEMP sort of thing" for international customers.
- Different types of customers, some want to be very involved, others do not want much if any involvement before delivery.
- Foreign customers have had to come to terms with IWSM because they are having to deal with new players. Single face in new location. Still letting customers still deal primarily with the people they used to.

ALC Interview Response:
- None that he was aware of. The SPO is trying to put together an Operating Instruction which will address how the organization will deal with this issue.

<u>**Other Observations**</u>.
Product Center Interview Response:
- Very diverse program.
- Still incorporating "state of the art" or "state of the practice" technology.
- About a 540 person organization at Wright-Patterson (including SETA contractors).
- PATs have been lessons learned repository.
- Program Characteristics: Over 60 unique configurations, 21 firm customers, 17 nations
- Milestone 3B in 1978.
- Flight Test is very busy and still very developmental. Customers try to add things like options on a car. Many configurations need to be tested because haven't been tried before.

Appendix E: LANTIRN Research Findings

Contracting Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- Would not have changed anything. The transition process was somewhat transparent.
- The process has been good. Has allowed an examination of processes to take place and make improvements.
- Felt that selecting a set of pilot programs to create a set of "lessons learned" was a very good practice.
- The best in-house practices resulted from applying TQM tools and techniques. TQM helped evolve teams. The eight teams are: the Navigation Pod Team, the Targeting Pod Team, the Depot Team, and the Product Improvement Team. Additionally, there are four FMS teams concerned with issues regarding each FMS buy. Member of the teams come from both locations. The teams are continuing to be trained.
- The culture at ASD was already changing with the creation of the team concept when IWSM started to create another change. These changes evolved together.

ALC Interview Response:
- The IWSM transition has not impacted very much.
- Attended some of the early IWSM meetings. Saw IWSM as another avenue for elevating problems.
- What the contracting area depends on is a valid purchase request that is complete, a valid requirement. Any other relationships are the responsibility of the requirements side.
- Haven't seen any problems with IWSM.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- The CCB process is the most significant example of a change of business processes.
- Most of the process changes do not involve how to put something on contract but rather how to board something or obtain approval on something.
- The ALC still performs all of its own contracting but there is coordination between the two contracting offices. There is still a question on some issues as to who should contract, ASD or Warner-Robins. Does not believe that it would be beneficial for ASD office to control Warner-Robins office.

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- Another practice that has seen changes is the boarding of no-cost ECPs. There is now a cut-off date each month for gathering the ECPs together and process them together that month. Pre-IWSM, there was not a standard practice regarding how to handle these. They often were held for months at a time to be grouped with another change. This practice has kept these changes from being delayed.
- An example of the benefit of improved business practices was provided: Advance Change Study Notices (ACSN) were submitted to LANTIRN office at ASD to procure common support tools from the prime contractor after talking to a lower level logistics manager at Warner-Robins. The lower level manager had suggested an impractical approach for obtaining the items. Rather than inquire further up the Warner-Robins chain, the individual submitting the ACSN had decided to procure the tools from the prime contractor. This would have been substantially more expensive. The contracting officer at ASD talked with contracting personnel at Warner-Robins and is procuring the common tools through other channels at lower cost.
- Another example that was provided: Warner-Robins is searching for "fall-out" money to cover a spares short-fall. There is now a coordinated effort between Warner-Robins, ASD, and the prime contractor to look for it and be prepared to process it when it is found.
- There used to be three types of reports that would come from the field: Service Reports, Material Deficiency Reports, and Product Quality Deficiency Reports (PQDRs). Now they are all called PQDRs. However, the Defense Logistics Agency was not made aware of this change. The DCMAO offices are required by regulation to manage all PQDRs. The DCMAO previously only received PQDRs on PMRT'd programs. New procedures involving a sub-coding of the PQDRs is being developed.

ALC Interview Response:
- Due to a change in organization at the ALC, the contracting officer is working more closely with the requirements side. This was not due to IWSM.
- The regulatory requirements haven't changed. Still go through the same standard steps.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- Have used the IWSM Transition Plan and the IWSM White Papers.
- Kept in mind the goals provided from the Steering Committee Roadshow.

ALC Interview Response:
- Was involved in some of the early IWSM meetings. This helped provide a perspective of IWSM. However, the goals of the meetings were not very advanced because the chairmen did not have firm goals.
- Did learn a lot at these meetings. They looked at the goals and objectives of IWSM.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your contracting organization?

Product Center Interview Response:
- The conference room has been equipped with telephone conference capability.
- The FAX machine is used extensively.
- In the process of establishing a Local Area Network.
- There has been little talk of establishing a VTC capability.
- Effort is made to balance the TDY burden by establishing that each different type of review occur in appropriate locations.
- Discussed the Acquisition Program Tracking System (APTS). APTS establishes a set of metrics in six areas: Responsiveness, Cost, Schedule, Performance, Acquisition Excellence, Work Environment.

ALC Interview Response:
- Have had people from the SPO call who never would have called before.
- Have had team training with the SPO.
- Do not use E-Mail. Most of the interaction is with the requirements people at the ALC.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Did not encounter any major hurdles from the contracting standpoint.

ALC Interview Response:
- Did not experience any major hurdles.

Investigative Question 6. How has IWSM affected the government/contractor relationship with your contractors? How has the transition impacted any of your programs contracts? Any contractual cost/schedule impacts?

Product Center Interview Response:
- There were no cost or schedule impacts that could be directly attributed to the IWSM transition.
- The relationship with the contractor is somewhat different but the same people are involved. Previously, the same contractor dealt with both ASD and Warner-Robins, but independently.
- The two centers share the contractor's letters now. If the contractor is non-responsive, both centers will stay on top of the contractor.
- The two centers now have a more unified front.

ALC Interview Response:
- Having a higher level authority to elevate problems has been an advantage. ALC issues are treated with the same weight as the Product Center.

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- The single face to the contractor provides the program with more strength with the contractor.

Investigative Question 7. How has IWSM changed the use of the Defense Contracting Management Administration Offices (DCMAO)?

Product Center Interview Response:
- Personality plays a part in the relationship with the DCMAO. The previous ASD contracts manager had never met the Administrative Contract Officer (ACO). One of the first actions the contracts manager took when coming on board was to meet the ACO.
- See issue on question #2 regarding PQDRs.

ALC Interview Response:
- IWSM has not changed this relationship.

Engineering Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices" helped you the most during the transition?

Product Center Interview Response:
- In general, LANTIRN had a very good process. At the start a number of people were selected to attend an off-site. These people were largely from the "working level." There were positive and negative aspects to this approach. On the positive side, there was a wide variety of perspectives involved. On the negative side, the management asked the working level to do management's job. However, it was not fair to provide little or no guideline of a framework to work with. This resulted in the off-site generating some recommendations which were turned down. There were some morale problems due to this problem.
- The program office culture has been very participatory in style. This culture was very helpful while developing the new organization. It created a more cooperative atmosphere.

ALC Interview Response:
- The biggest thing to be changed would have been more education on both parties part. There was an initial (TQM) meeting in Tulahoma, TN but only the people who went, 27 people in all, received the training.
- There has been a problem in training the engineering people at the Product Center on what the ALC engineering shop does.
- There has been fairly open communications. This has helped a lot.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- The biggest thing is the direct participation of the ALC in the

CCB.
- There is an effort, fairly successful, in including the ALC in all
of the processes.
- The team leader of the Navigation Pod Team is now at Warner-
Robins. This is a significant change.

ALC Interview Response:
- The engineering side at the ALC has changed a lot. The
engineering side at the Product Center has not changed. Instead of
taking the best of both sides, the ALC has just adopted the Product
Center's way of doing business.
- The problem with this arrangement has been that the Product Center
people have mostly overseen the contractor's development. The ALC
has to do development efforts in-house. The plan had been to phase
out contractor development and phase in ALC in-house efforts. The
Product Center does not want to do this. They see their job as
overseeing the contractor and now the ALC is becoming like a
contractor.
- This results in Government engineers overseeing Government
engineers.

Investigative Question 3. What guidance and external expertise
truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- There was very little guidance to start with and little time to
seek any.
- People basically had to use their own experience and judgement.
- Has been aware of other programs talking to people in LANTIRN for
advice.

ALC Interview Response:
- The best thing they did was getting together in Tulahoma TN and
got to know each other and learn each others jobs.
- As stated before, only the 27 people who attended really
benefitted from this experience. The other 144 who didn't go are
having a harder time adapting.

Investigative Question 4. What specific strategy(ies) have been
established to enhance communication/control with the geographically
separated part of your engineering organization?

Product Center Interview Response:
- Telephones have been used extensively. The speaker phone
capability has been upgraded.
- FAX machines are used frequently. Charts are FAX'd to the ALC
before telecons so that everyone is looking at the same charts.
- There is an attempt to meet face-to-face periodically.
- Try to become more conscious of the communication process.
- Communications seem to work pretty well but there are still more
cultural differences to overcome.

ALC Interview Response:
- Getting the Product Center people on the phone list.
- Inviting the ALC people in on the staff meetings over telecon.
- Implementing a Local Area Network so that both the ALC and the Product Center are tied together.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- There is a vast cultural divide between the support and acquisition environments.
- The acquisition side has not always looked at the "lust to dust" perspective. They have made choices which save money in the short run but cost in the long run.
- The support side tends to look at issues in isolation. They often do not see the relationship of one issue to others.
- There may have been some people who brought agendas or issues not related to IWSM into the process so that they may be advanced by all of the changes. This has sometimes muddied the waters.

ALC Interview Response:
- The biggest hurdle is trying to understand what the Product Center engineers are supposed to be doing now that their job of overseeing the contractor is ending. Immediately after the Tulahoma meeting, the ALC engineers thought that the Product Center engineers would be picking up some of the engineering work, but they insist that this will not happen.
- The perception is that the Product Center intent is for them to oversee the ALC engineers as they did contractor's. This would add no value to the program.
- When overseeing the contractor, you have to guard against the contractor's extra motive of profit. The ALC can't make any profit. They are just as intent on looking out for the Government's interest as the Product Center. It does not seem that the Product Center engineers believe this.

Investigative Question 6. How will the merger affect the working relationship between a weapon system program office and its associated commodities program offices?

Product Center Interview Response:
- Has not detected a change with customers or other interface relationships.

ALC Interview Response:
- As a commodity the situation has been unique. The SPO and the contractors for the F-16 or F-15 are having a difficult time recognizing the ALC as part of the LANTIRN SPO. They are told sometimes to send requests through "the SPO."

Investigative Question 7. To what extent has the merger increased the involvement of Air Logistics Center (ALC) Quality Assurance engineers into Design/Development activities?

Product Center Interview Response:
- Has not seen any impact yet from the ALC in design activities.
- There is a "fledgling" product improvement program which has the potential to experience a joint engineering environment.

ALC Interview Response:
- There has not been an increase in contractor oversight. The ALC, previously believing that they would be accepting PMRT, had been participating contractor oversight. This has been decreased now that the two organizations have merged. Have tried to eliminate duplication of effort.

Investigative Question 8. How has the merger affected the membership of the Configuration Control Board? How has it affected the manner in which the CCB is conducted?

Product Center Interview Response:
- The procedure itself has not changed too much except that there is now a new board member who is connected via telecon.
- What has changed, and is continuing to evolve, is the change process regarding organic changes. There are members of the ALC community who are proposing changes which they will implement itself. Procedures have been established for the ALC to submit ACSNs.
- An example was provided: The issue involves how to address organic changes to digital systems which may involve flight safety issues. In the development process, there is a very rigorous process to certify flight safety software and hardware. There does not appear to be the same procedures in the maintenance community. Some programs establish from the start that the contractor will maintain flight safety hardware and software throughout the system life cycle. This is an expensive approach but provides the opportunity for the people most familiar with the equipment or software to make the changes. Some feel that the process has not been examined enough to satisfy all of the board members that the ALC has the capability to make these type of changes. The desire to examine the process has been interpreted as a challenge to some people's technical competency. The basic question: does the ability to maintain mean that they can also upgrade.

ALC Interview Response:
- Prior to IWSM the ALC CCB was delegated to the ALC directorate level.
- After IWSM, the SPOs CCB is now used. There is an ALC representative on the CCB.
- From ALC perspective there has been a large turnover in CCB membership.

Investigative Question 9. What are the roles and responsibilities of the engineering function for your program at each center (ALC/Product Center (PC); please respond regarding both locations)?

Product Center Interview Response:
- The roles and responsibilities have not substantially changed. This is partially due to the direction from upper management that people would not report to people in a geographically separate location.
- The ALC is being asked to play two roles: implementer of some activities (organic modifications) and to act as the oversight (watchdog) for those activities. This is a difficult role.

ALC Interview Response:
- Believe that all of the engineers at both centers should report to the same director. Then they should be matrixed out to the various product teams.
- Unfortunately there is a rule that prevents the engineers from the ALC from reporting to a manager at the Product Center. This automatically created an "us and them" situation.
- The roles and responsibilities should be the same. This includes overseeing the contractor and doing as much organic engineering as possible.

Financial Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- The transition would probably have been smoother if some preparation had been invested up front. Training and orienting "what is IWSM" would have helped.
- Need to get some of the members to become team players. Many people do not have a broad enough understanding of the program. Need an indoctrination into the program.
- ALC members do not have a SPO mentality.
- It took several months to learn the ALC language and how to manage the stock fund.
- Developed standardized processes for financial management. Would set up a "dummy" process and take it down to the ALC and discuss it and work it until a process could be agreed upon. However, there is still some resistance to adopting the new process.
- Working on developing a "Common Reality Tree" based upon Theory of Constraints philosophy.

ALC Interview Response:
- Would have appointed a deputy director at the ALC who had experience and knowledge of the functions, procedures and practices for providing logistics support to the user. Would not have picked someone from somewhere else who did not have this expertise.

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- There were no "in-house" practices that helped.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- There is now a broader perspective of the program.
- Now work with the ALCs more. There are two types of funding which are not under the single managers control: Cost of Operations for Depot (COD) and RSD which is for replenishment spares and repair. This money is not program specific so the single manager has no visibility. Trying to get the ALC personnel to provide some visibility.
- Issue papers are being written to suggest that the money be made program specific.
- Have developed metrics for the RSD money to provide some visibility. An example was provided of the problems associated with having no influence over this money. LANTIRN had submitted a $4.4M purchase request. The ALC committee decided, without understanding the programatics, to fund $200K. After explaining the situation to the committee chairman the decision was reversed and the requirement was fully funded.
- Have spent a lot of time at Warner-Robins.
- There is now a full-time financial management person at the ALC. This persons primary experience is in managing COD. A large part of their time is spent tracking down financial information for the product center.

ALC Interview Response:
- The SPO is more receptive to ideas of all members of the organization, both from the ALC and Product Center, now that they all report to a single System Program Director who has responsibility for the entire system.
- There is now more money available for TDY, office supplies, new equipment, etc.
- An example was provided regarding the Program Director's increased attention to the support area: The ALC takes a more active role in the ECP process. ALC people did not take an active role in the ECP process before IWSM. They have also established a Technical Interchange Meeting, which involves the SPO, the ALC, and the contractor. This was not established prior to IWSM.
- They now take a more active role in identifying the funding for ECPs.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- "We were given total flexibility for implementing IWSM."
- Tried to seek advice from another program once, but this did not work out because the other program was no more confident in their approach as LANTIRN was in theirs.

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- Have provided advice to other programs.

ALC Interview Response:
- The biggest thing in this area was the working group meeting that was held at Tulahoma. This meeting was composed of people who had expertise in various areas from both the ALC and Product Center. They identified the tasks and processes. There was a development of understanding what one another's roles were.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your financial management organization?

Product Center Interview Response:
- Have used teleconferencing during meetings.
- Have used the FAX machine.
- A computer link is being established to provide a capability to share documents and files electronically. The program office had to fund this entire effort.
- Had never been to the ALC before IWSM. Now travels to the ALC once or twice a month.

ALC Interview Response:
- Have established teams with team leaders. The location of the team leader is dependent on the location with the greatest volume of workload.
- The team members have telecons.
- There has been formal training in team building.
- E-Mail is used.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Lack of training and understanding in the logistics funding area.
- Lack of visibility in the logistics funding area for budget authority, obligation status, and expenditure data. Just recently the ALC counter part has been able to access the computer to check on these issues.
- No program identification for COD or RSD funding.
- Lack of financial execution status at the ALC.
- Lack of support funding for the ALC personnel. Have had to send money via AF Form 616 to allow ALC personnel to support TDYs.
- Lack of a single point of contact at the ALC for financial management. This was fixed by assignment of a person full-time.
- Funding shortfalls.
- There has been resistance to implementing the standard processes that they have jointly developed.
- Biggest hurdle: Single manager does not have visibility into all funding issues.

ALC Interview Response:
- From the ALC standpoint, educating the Product Center people on

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ALC policies and procedures has been a hurdle. They have been receptive but there has been a lot for them to learn.
- Policies and procedures refers to the ways funds can be spent. There are many more "pots of money" which are very specific.

Investigative Question 6. What interim procedures have you used to manage program funding during the IWSM transition until a final solution is found to the "Total Program Funding" issue?

Product Center Interview Response:
- Working to develop standard processes.
- When guidance is lacking, like to develop own procedures.
- Hold financial management reviews at the ALC.
- Signing out of the COD and RSD budgets by the single manager.
- Continual oversight.

ALC Interview Response:
- Established a funding manager at the ALC who is responsible for all LANTIRN funcing at the ALC. This includes:
    -- All budget initiations and obligations at the ALC
    -- All money received from the SPO
    -- Reports findings back to the financial manager at the SPO to be reported to the System Program Director
- This person was identified by just adding responsibilities to already existing position. This person was already familiar with the processes and procedures at the ALC.

Investigative Question 7. Describe the problems (and their solutions) you have encountered regarding the applications of 3600, 30XX, 3400, or other appropriations during the IWSM transition.

Product Center Interview Response:
- Lack of COD funding.
- Have had to supplement ALCs with SPO money.
- Lack of expenditure visibility into initial spares money.
- Unfunded requirements not worked at the ALC.

ALC Interview Response:
- Have not had any problems with applications. Knew before how to apply money and this still applies.
- Pre-IWSM funding documents which were sent from the SPO down to the ALC were sent to various people. There was no consolidated picture at the ALC of LANTIRN funding.

Investigative Question 8. How has the merger affected the reporting of manpower costs? (against program vs. against Product Division/ALC?)

Product Center Interview Response:
- Not Applicable.

ALC Interview Response:
- Not Applicable.

Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- The transition was not that hard. The most difficult part has been getting control of program funds.
- The organization had already been implementing TQM prior to IWSM so a process was in place to make decisions at low levels.
- Integrated Product Teams were already in place.
- At the start of the IWSM transition, 27 LANTIRN people were sent to an off-site meeting to "flesh out" some organization charts. The meeting was chaired by two deputies (Lt Col level), the rest of the people were low level workers.

ALC Interview Response:
- The program is broken up into three systems: the Navigation Pod (have made 550 units, easy to maintain), the Targeting Pod (have made 125 units, difficult to maintain), and the Support Equipment
- Program emphasis is on improving maintenance.
- In the past there was a lack of concern on buying support equipment and sufficient spares. This is no longer the case. The program director is now putting more focus on these issues then ever would have in the past.
- It would have been easier if the system were not fielded before the support capability was established. This was due to Desert Storm.
- The in-house practice of providing very good support from the Product Center and making all participants, regardless of their location, feel like part of the team.
- There are still some individuals at both locations that feel that either the ALC way or the SPO way is the only way to do business. Their minds will never be changed.
- Works directly for the single manager at the Product Center. OPRs are signed by the single manager and then sent to the general at the ALC.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- The primary changes are that there now no PMRT and there is now a single CCB and a single Material Improvement Program (MIP).
- In the past there were two sets of processes and the Program Director's perspective was different. The previous emphasis was on fielding the system and establishing spares. The ALC was the one more concerned with long-term issues.
- Since IWSM the single PD has started becoming concerned with MICAP rates and CAMS.

- 65% of the budget now goes to support enhancements and support is now the primary emphasis. The budget does not look the same.
- The single manager can now make more balanced decisions. In the past, trading a development issue for a support issue was a sacrifice rather than a trade-off.

ALC Interview Response:
- Have tried to stream line much of the operation.
- Have 25 people of various types. There is not an endless supply of people. Need support from the SPO.
- On the phone daily with Product Center people.
- One CCB.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- Most consultation was with the ALC.
- Some help was obtained from the Steering Council.

ALC Interview Response:
- The off-site at Tulahoma made people from both centers feel like team members.
- Team training that has been spearheaded from an organization at ASD. They have led a three-day session for each of the product teams.
- Have tried to accommodate as much acquisition training as possible.
- The external force has been personalities that work well together.
- One good aspect has been that the ALC manager is an O-5 who reports to the O-6 at the Product Center. This also minimizes conflict.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your management organization?

Product Center Interview Response:
- Counterparts have been absorbed into the organization largely through the use of teleconferencing.
- Noticed an apparent lack of middle management at the ALC. There seemed to be GS-12s and Colonels, with little in between. Also the functional organizations were not tied together. Noticed that LANTIRN was a very small part of the ALCs organization.
- Decided that in order to effectively manage the efforts at the ALC a dedicated Lt Col was needed there. However, there were no billets. An ASD Lt Col billet was transferred to the ALC to help manage.

ALC Interview Response:
- There are many more conference calls.
- The teams have formal telecon meetings at least once a week and informally at least once a day.

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- It takes a lot of coordination to come up with joint decisions.
- Plenty of TDY and working groups.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- The biggest hurdle is the diverse cultures. Each is very strong.
- The following theory was offered:
    -- The AFSC mission involves taking risk and managing risk. This environment encourages growth in people who like to start from scratch.
    -- The AFLC mission is to keep the risk to a minimum. This encourages people to change as little as possible.
- Suggested that it will take years before these two fields of view will merge. Also suggested that AFSC trained people need to learn to baseline a system earlier.

ALC Interview Response:
- There have been a lot of people who have wanted to do business the old way.
- PAT teams who always looked for the easy way out. They seemed to push off from responding in a way that would give any true direction or leadership. There is some bitterness, especially with the Financial Management PAT. The single manager has no control over spares money. This was taken up to the PAT.

Investigative Question 6. How has IWSM affected the management of your Program Objective Memorandum (POM):
a) 92-94 POM years
b) 94--> POM years

Product Center Interview Response:
- There is no real difference between the near-term and long-term POM.
- Has had to include spares in the POM.
- There is no POM input for stock funding. The program is at the mercy of the ALC commander for stock funding who tries his best to satisfy all program's needs. Has not found a way to influence the system or provide any input to help with priorities.
- Suggested that it would be ideal to have one color of money and be able to provide trade-off options to the user.

ALC Interview Response:
- This has been the first year that the POM has been combined. It has been fortunate that the financial management people at the Product Center has been aggressive.
- It appears that the combined efforts on the program have a synergistic effect.

Investigative Question 7. What are the roles and responsibilities of a Single Manager?

Product Center Interview Response:
- The single manager is involved in everything in the system's life-cycle.
- It is a nice environment. No one tells the single manager how to do the job. There is only one report due per month to upper management.

ALC Interview Response:
- Single manager should keep the managers in line. Keep them off of "hair brained" schemes.
- The single manager's role is to keep the organization operating as team. The LANTIRN manager does this well.

Investigative Question 8. How has the IWSM transition affected management of the Program Management Directive (PMD)? Has the PMD been updated since the transition? In what ways has it been updated?

Product Center Interview Response:
- The PMD was updated immediately (Oct/Nov 91).
- All direction was combined in the PMD. This included supportability.

ALC Interview Response:
- It has been updated. The two organizations worked together to develop a new date at which the Targeting Pod should be organically supportable.

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

Product Center Interview Response:
- Only one change has been required. The LANTIRN program still does not have control over its Automatic Test Equipment (ATE) (this is a commodity that is also undergoing the IWSM transition). An MOA is being established to define this relationship.

ALC Interview Response:
- Have been able to cut down on the amount of bureaucratic paperwork needed between the Product Center and the ALC. There are still some MOAs with other organizations like the customer.
- The key to making the agreements work has been good working relationships.

Test Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- At the beginning the briefings did not seem specific enough. There was a great deal of concern as to whether or not people had to move. These anxieties needed to be addressed earlier.
- As IWSM was being implemented, primary responsibility of the Navigation Pod was being transferred to Warner-Robbins. It was difficult to determine what effects were due to natural transfer and what was due to IWSM.
- Within the test functional area, no special practices were established to assist in the IWSM transition.

ALC Interview Response:
- SEE ENGINEERING FINDINGS

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- With regard to the test activities with Edwards AFB, there have been no significant test changes.
- There are some software changes required in the Targeting Pod as a result of integration testing. The ALC has suggested that they can do some of the software modifications rather than go to the prime contractor. There is now an effort to determine what changes can be done by the ALC and what changes must be performed by the contractor. It is unknown whether or not they are "biting off more then they can chew."
- It is too early to determine if there will be a cost savings.

ALC Interview Response:

- The test side has slowed way down. There are no OT&E evaluations going on. The only activities are individual engineering investigative efforts.
- There are tests when software loads are dropped. The practices on these have not changed. They were being done right before and will continue to be done the same way.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- Haven't seen any.

ALC Interview Response:
  - SEE ENGINEERING FINDINGS

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your test organization?

Product Center Interview Response:
  - Due to the maturity of the Targeting Pod, a Targeting Pod Team was formed to manage it. Although not a direct result of IWSM, IWSM was a strong player in the development of a Nav Pod Team. IWSM did cause the leader of the Nav Pod team to be an engineer located at Warner-Robbins.
  - IWSM also caused the development of a third team, a depot team.
  - Procured additional teleconferencing equipment so that teams can conduct joint "standing" meetings (meetings which happen on a regular schedule).
  - There has been an increase in the amount of communication with the ALC.

ALC Interview Response:
  - SEE ENGINEERING FINDINGS

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
  - Did not know where direction was coming from.
  - Did not know who had overall responsibility at the start.
  - Deciding what work should be moved to Warner-Robbins for primary responsibility.

ALC Interview Response:
  - SEE ENGINEERING FINDINGS

Investigative Question 6. How has IWSM affected the roles and responsibilities of the test divisions at each location (ALC/PC)?

Product Center Interview Response:
  - At the product center there was a single person responsible for test issues for each pod. One responsible for the Navigation Pod and one for the Targeting Pod.
  - The Navigation Pod test manager works closely with Warner-Robins for flight testing. It used to be the Product Center team chief. Now, with the team chief located at the ALC, the product improvement chief is responsible for Nav Pod testing.
  - Flight test has not changed as a result of IWSM.

ALC Interview Response:
  - There never has been a test division at the ALC. The SPO no longer has a test division either. The roles and responsibilities should be the same. Just because someone is located at one center or the other should not change their responsibilities.

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Investigative Question 7. How has IWSM affected the composition of system or subsystem test teams?

Product Center Interview Response:
- The main change is that the Navigation Pod is managed at the ALC. It is hard to determine whether or not this is an affect of IWSM or just system maturity.

ALC Interview Response:
- Don't think it has. In the case of the ALC, still use the same people to monitor tests and review the test data.

Investigative Question 8. How have Test and Evaluation processes (Test and Evaluation Master Plan updates and reviews, Contractor Test Plan/Procedure reviews, etc.) been affected by the IWSM transition?

Product Center Interview Response:
- The program has matured to a point in development that they are completing what is expected to be their final TEMP. There is no evident change due to IWSM.
- There does not appear to be a change in the ways in which test plans/procedures are managed.

ALC Interview Response:
- None of this has changed.
- Past the point of changing the TEMP.
- Past the point of reviewing formal contractor test plans and procedures. Even if they were doing still this, IWSM would not affect this at all.

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

Product Center Interview Response:
- Have not seen any changes in any agreements.

ALC Interview Response:
- Not aware of any changes in any agreements.

Appendix F: FPS-124 Research Findings

Contracting Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- The biggest problem at the start was that the people who were running IWSM did not know what they wanted. When you gave them what you thought they said they asked for it turned out that it wasn't what they wanted.
- As programs developed plans and were asked to revise them, everybody watched when one was approved so they could try to copy the essence of it.
- At the start, they tried to start with a clean slate and developed a plan where contracting would be centralized with clear lines of responsibility.
- This turned into "if you do what we like, we will let you do it, otherwise, we will tell you how to do it."
- Some recommendations were incorporated. For the most part nothing changed. Never received a comfortable feeling that they would use what was suggested.
- The brainstorming sessions were appropriate but less than 10% of the results were incorporated.
- At ESD they do Systems Contracting, which involves day to day risk. At the ALC and in some of the small SPOs they do more process oriented contracting (where they may process 50 modifications in a week). The Systems Contracting requires higher authority levels than in the other type. The process oriented contracting involves following checklists by the numbers. At the SPO, checklists are used for reference and blocks are used as applicable.
- The only direction was to use TQM and make IWSM happen.
- Contracting in-house practices did not change very much because contracting bounds are pretty much set by law.
- Have tried to make some changes like: speeding up proposals, using the RFP bulletin board, getting out to industry earlier for comment, and involving industry in writing specs.

ALC Interview Response:
- No Contract Manager available for comment.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- As a practical matter, not very much.

- At the SPO, they have always pretty much had to "fly by the seat of your pants" and that doesn't look like it will change.
- The AF level changes to contracting regulations look like they will make some things easier. Still waiting to see the AFMC supplement.
- What scares him the most is that the regulations will be written for the lowest level, GS-9's at the ALC. This would put too many constraints on the SPO. SPO contracting stays within the regs but do not follow a checklist.
- The new business clearance procedures make a lot more sense.
- Can't really determine how IWSM will work until the new regulations are released.

ALC Interview Response:
- No Contract Manager available for comment.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- Talking to other programs has been useful. The things that come out of command is gibberish.
- The things that come out from command are either hard to understand or are overbearing.
- By talking to other contract managers from other IWSM programs, it was possible to develop approaches to answering questions from command.
- Too much of the information from command was too open ended. It sounded like they would let you do what you wanted. But this was not the case.
- The situation still exists where authorities in other locations are trying to hold on to business authority. They don't let you do the job. They give you guidance, and then turn around and make it regulations.
- There are people making decisions at the staff who have not been doing SPO level contracting for 15 years or more. In some areas their experience is superior, but not in all cases. Sometimes you get letters that say in effect: "This never happened here, but it did happen someplace, so never let it happen here again." There are too many blanket requirements because somebody made a mistake somewhere.

ALC Interview Response:
- No Contract Manager available for comment.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your contracting organization?

Product Center Interview Response:
- None. The only contracting support at SM-ALC is through a matrix. There are no dedicated bodies. This is a problem.
- Have established a relationship with the division chief but not

optimistic that it will help. Other priorities will override this program.
- E-Mail is exchanged between the managers.
- Starting to use the same computer data bases.
- There is still a disparity in manual approval authority: the SPO contracts manager has $25M and the ALC manager has $5M.

ALC Interview Response:
- No Contract Manager available for comment.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- The major hurdle was that nobody ever aimed the effort in a particular direction. No specific guidance to decide on how they would like to do business. When you said what you would like to do, you were told that it was against the regulations.
- If they were serious about removing hurdles, they would remove AFMC. Make the programs directly responsible to the Pentagon. Why do they need another staff function in between? Do not see what value they add. Never saw what value AFSC adds.

ALC Interview Response:
- No Contract Manager available for comment.

Investigative . Question 6.   How has IWSM affected the government/contractor relationship with your contractors? How has the transition impacted any of your programs contracts? Any contractual cost/schedule impacts?

Product Center Interview Response:
- There have been no contractual impacts, if there was to the program then it was only minor.

ALC Interview Response:
- No Contract Manager available for comment.

Investigative Question 7. How has IWSM changed the use of the Defense Contracting Management Administration Offices (DCMAO)?

Product Center Interview Response:
- DCMAO is being used more and more. Don't know whether or not if this is a part of IWSM.

ALC Interview Response:
- No Contract Manager available for comment.

Engineering Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the

transition easier/smoother, what would you have changed? What "in-house" practices" helped you the most during the transition?

Product Center Interview Response:
- Would have had an interim manager that could have made unilateral decisions on divergent issues.
- Initially, the ALC personnel would not meet with the Product Center personnel. The ALC engineering/test counter-part changed four times in one week.
- The structure is totally different at the two organizations.
- Whenever a dispute arose, it would be raised up through numerous levels while the working level waited.
- The only thing that has changed has been the publication of a paper which describes what should have happened.
- After working to get an engineer/test person assigned to support the FPS-124 program, a person was assigned and worked very well for about 3 months. He was then unilaterally reassigned off the program.

ALC Interview Response:
- The best way would have been to move the product center jobs to SM-ALC.
- A second approach that was suggested was to administratively move people to ESD (keep them at SM-ALC but make them formally report to ESD). The way it is now nobody can run the risk of saying that they report to ESD and still expect to get promoted.
- No in-house practices helped.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- A lot of attention is now paid to what had been considered "cosmetic" engineering. They are now attuned to these things.
- The testing is a little more thorough, more attention to detail.

- In the past there was very little interest in the logistics area. Now attention is paid to support issues.
- Reviewed Factory Acceptance Test procedures, which they did not do before. They are now interested in every system instead of just the first few prototypes.

ALC Interview Response:
- At the moment there have not been any changes.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- The pilot programs tried to help each other.
- Periodically unsolicited guidance was provided. They noticed that when the guidance was not followed, implementation plans were not

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accepted.

ALC Interview Response:
- As far as engineering goes, there was participation in the engineering PAT. It started out well at first, unfortunately they ended up not making any substantial changes. Stopped supporting it.
- The PAT experience provided some insights but did not "pan out."

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your engineering organization?

Product Center Interview Response:
- It was their intent to periodically meet face-to-face. However, it became apparent that there was no support because there was no continuity of support. A number of meetings were attempted but they were pre-empted by movement of ALC personnel.
- Attempted to bring ALC personnel TDY to Hanscom by providing funding. The ALC personnel did not want to come. This resulted in a request for a dedicated person. Eventually did have one assigned but he was recently reassigned.
- VTCs were conducted and E-Mail has been used.
- FPS-124 is buying VTC equipment.
- During initial meetings to implement IWSM personnel from the two centers could not reach agreement, even with the help of facilitators. It got to the point that one individual stated that before he would be a part of this merged organization he would pump gas. This was before the decision had been made that people would not be moved.
- There was and still is a lot of animosity at the higher management levels.

ALC Interview Response:
- A good working level relationship has been established.
- The management relationship has not worked as well. It seemed that management inhibited communication more than it helped.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- The basic problem was that people thought that they were being replaced.
- The product center personnel are capable of doing both jobs, unfortunately, with a few exceptions, it does not work the other way.

ALC Interview Response:
- Extreme management resistance.
- From the first indications of IWSM people were supposed to work together. All acquisition related people at the ALC were supposed to be certified. There was resistance from management to let people get certified due to fear that certified people would be pulled into

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the ESD organization. Some people decided to get certified on their own.
- The engineering boss went through the organization and tried to label all of the engineering position as non-acquisition related so none of them would have to be certified. Eventually designated 3 out of 8 positions as acquisition related.
- In reality, if people are not certified they should not be titled system engineers and be transferred somewhere else.

Investigative Question 6. How will the merger affect the working relationship between a weapon system program office and its associated commodities program offices?

Product Center Interview Response:
- There is no impact. Not working with any commodities.

ALC Interview Response:
- Will not affect the working relationship on this program.

Investigative Question 7. To what extent has the merger increased the involvement of Air Logistics Center (ALC) Quality Assurance engineers into Design/Development activities?

Product Center Interview Response:
- Developed an integration process concept and negotiated it with the ALC. Its implementation has been discontinued due to the lack of support at the ALC.

ALC Interview Response:
- At first it worked out pretty well, he took all of his tasking from ESD and acted as part of their group.
- In the last month management has moved him from the program. He is only allowed to spend 10% of his time on the program. Management does not want any of their engineers working design/development activities. This was a formal policy.

Investigative Question 8. How has the merger affected the membership of the Configuration Control Board? How has it affected the manner in which the CCB is conducted?

Product Center Interview Response:
- There has been no change to the CCB.

ALC Interview Response:
- The CCB is exactly as it was before. There is no representation from the ALC on that board.
- At first, there was some inputs provided into the CCB. Now, however, they are not allowed to participate.

Investigative Question 9. What are the roles and responsibilities of the engineering function for your program at each center (ALC/Product Center (PC); please respond regarding both locations)?

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Product Center Interview Response:
- The product center engineers are systems engineers and the ALC engineers were called sustaining engineers. The plan was to integrate them with the product center engineers.
- Now, however, no support so no role.

ALC Interview Response:
- Direction from local management is to only support the program 48 minutes a day (10%). This resulted in an agreement as to the scope of his work:
-- Look at a document's cover sheet for typos.
-- Look at the next several pages for typos and then close the book.
- ESD must assume 100% responsibility for engineering.
- This descoping of effort is based upon conflicting direction between SAF/AQ and SAF/LG. The priority was to try to support the LG effort.

Financial Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- Would have liked to have seen early identification of counter-part at the ALC.
- The most helpful "in-house" practice was the use of a facilitator. The facilitator is a member of the ESD/TN office.

ALC Interview Response:
- No Financial Manager available for comment.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- Have not changed any practices. Still doing the same way.
- Nothing will probably change until all of the money starts coming to the single manager.
- There has been a great deal of resistance from SM-ALC.

ALC Interview Response:
- No Financial Manager available for comment.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- Again have to go back to the facilitator. Works directly with the AFMC IWSM team and keeps everyone focused on the issues that need to

be addressed.
- There has not been much interaction with others. The primary
contact has been with the facilitator.

ALC Interview Response:
- No Financial Manager available for comment.

Investigative Question 4. What specific strategy(ies) have been
established to enhance communication/control with the geographically
separated part of your financial management organization?

Product Center Interview Response:
- SM-ALC financial management people have not been very involved.
Any contact has been initiated by the product center financial
manager.
- The controls will be achieved when the funding is supplied
directly to the single manager.
- Have talked to the ALC financial management people a couple of
times.

ALC Interview Response:
- No Financial Manager available for comment.

Investigative Question 5. What were the major "hurdles" that you
encountered during the IWSM transition?

Product Center Interview Response:
- Lack of support from the SM-ALC financial management people.
- Also, there has not been a lot of direction from AFMC. It has
been pretty tough being pretty much on their own. Need more
direction.

ALC Interview Response:
- No Financial Manager available for comment.

Investigative Question 6. What interim procedures have you used to
manage program funding during the IWSM transition until a final solution
is found to the "Total Program Funding" issue?

Product Center Interview Response:
- Business has been carrying on as usual.
- Funding charts have been received from SM-ALC showing what funding
will be required in the future and how their funds are broken out.
- No change is anticipated until funding arrives to the single
manager.

ALC Interview Response:
- No Financial Manager available for comment.

Investigative Question 7. Describe the problems (and their
solutions) you have encountered regarding the applications of 3600, 30XX,
3400, or other appropriations during the IWSM transition.

Product Center Interview Response:
- Since doing business as usual. There have not been any problems.
The product center handles its money and SM-ALC handles it money.

ALC Interview Response:
- No Financial Manager available for comment.

Investigative Question 8. How has the merger affected the reporting of manpower costs? (against program vs. against Product Division/ALC?)

Product Center Interview Response:
- No changes. Don't anticipate any changes.

ALC Interview Response:
- No Financial Manager available for comment.

Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- At the start, there was no "how to" guidance.
- It probably would have been helpful if both sides had TQM training. Only the product center people had this training.
- Some people did not understand how to analyze, merge, or integrate processes. It was difficult to perform analyses with people who don't understand how to do this.
- It is also difficult to work with matrix personnel at SM-ALC.
- One engineer at SM-ALC was becoming familiar with the program, but was recently reassigned, unilaterally, at the ALC.

ALC Interview Response:
- If anything could have been changed the whole approach would have been different. Instead of building the Product Divisions with an ALC workload (which is the actual intent of IWSM as the main purpose), would have closed ESD and SSD and moved the acquisition mission to SM-ALC.
- Would have changed the SM-ALC commander to a 3-star position.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- The day-to-day business has not changed.
- IWSM has changed the way funding is managed. The following example was provided:
    -- FPS-124 is using Spares Acquired In conjunction with Production (SAIP). SM-ALC is required to fund for this. They

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had it originally, but due to a delay in the source selection process, they lost it to another program. Under IWSM the single manager should have control over this.
- To date, the single manager's insight into the program funding has not increased.

ALC Interview Response:
- No transition has happened. No business practices have been changed.
- The direction was to implement IWSM as best as possible with no changes to regulations or infrastructure.
- The kinds of issue being worked include for example who will fund for Technical Orders for items which have not PMRT'd and belong to a System Program Director who does not know how to provide support to users.
- Will have chaos on 1 Jul 92 and will probably start over.
- It will be accidental if there are any improvements in doing business as a result of the new AFMC regulations. The real drift of IWSM is not to improve business but to realign missions.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- The IWSM Roadmap helped.
- A briefing given to the two command vice-commanders resulted in some useful guidance and feedback.

ALC Interview Response:
- What helped was when the two 3-stars came to SM-ALC and said that what they wanted in the CONOPs was what SAF/AQ wanted to hear. That's how it was written. This also applied to the detailed Weapon System Plan.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your management organization?

Product Center Interview Response:
- Frequent telecons have been used.
- VTCs have been useful enough that FPS-124 is investing in some equipment.
- The biggest area for improvement in this area is attitude. There are still people at SM-ALC trying to provide inputs to the PMD without first coordinating them with the single manager. One example was an input that stated that the transition to SM-ALC would occur in FY 95. This, however, is a decision that must be made by the DAC.
- People must learn how to communicate (the process) despite the tools used.
- There are no established periodic telecons between the managers.
- The working relationship between the two managers are very positive. Customer Feedback Reports have shown high ratings.

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ALC Interview Response:
- The ideals of IWSM have been in place on this program for four years. The logistics part of the program office and the ALC have operated as one.
- Did not see many changes because the practices were already in place.
- E-Mail is used extensively and a link has been established between ESD and SM-ALC.
- Most teleconferencing has been used to answer IWSM questions and to deal with short notice issues.
- Have had several VTC networks involving headquarters, staff, and the product center. It became apparent that there was no coordination between people at HQ AFLC and the various staff elements at the ALCs or even within the various staff elements at an ALC. It seemed that the effort was to produce something (with regards to processes) and quality was secondary.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Turf battles.
- Financial Management.
- Trying to get people to work the program.
- Working with two different matrix systems.
- Need to develop similar attitudes about IWSM to start.
- Not inclined to be disenchanted due to set-backs because the IWSM process is still continuing and positive things have been happening.

ALC Interview Response:
- The hurdles are still there.
- There are arbitrary decisions being made regarding where to locate the single manager based upon a need to have a workload at the product divisions. It is also based upon an appearance of what SAF/AQ thinks needs to be worked, regardless of the status of the program.
- There is a pretention that the eight core processes are the same for a product center and an ALC. They are not, they are completely different. The missions are very different in nature.
- The "big lie" is that the guys who are acquiring systems can support them as well as an ALC.

Investigative Question 6. How has IWSM affected the management of your Program Objective Memorandum (POM):
a) 92-94 POM years
b) 94--> POM years

Product Center Interview Response:
- Budgeting for Interim Contractor Support could become an issue. It has not been budgeted for yet.
- No real affects to the POM yet.

ALC Interview Response:
- What IWSM has done to the POM has made the players realize that the System Program Director has responsibility for all budgeting areas.
- The fundamental way in which ALCs program is different than the way product divisions receive their money. The product center's money is fenced (specified for a particular program) while the ALC's is not.
- One benefit that will happen eventually will be the program director's ability to fund his efforts.

Investigative Question 7. What are the roles and responsibilities of a Single Manager?

Product Center Interview Response:
- Responsibilities have not really changed. The manager now is being provided the proper tools to manage these responsibilities.
- The single manager has always been responsible for making the system supportable, now he is able to manage at that level.

ALC Interview Response:
- The responsibility for acquisition and support past PMRT milestones is the new responsibility for the single manager as it exists at a product division. This responsibility will be maintained at a product division for an indefinite period. The term maturity is nebulous so that product division commanders can maintain an even workload distribution longer than they have in the past.
- This was explained in a very clear way by the command vice commanders.

Investigative Question 8. How has the IWSM transition affected management of the Program Management Directive (PMD)? Has the PMD been updated since the transition? In what ways has it been updated?

Product Center Interview Response:
- The PMD has been changed.
- Changes were not significant. Mostly incorporation of AFMC.
- As mentioned earlier, there were attempts to tie the transition of the program to SM-ALC at a specific date.

ALC Interview Response:
- The PMD has been updated.
- It reflects the new MAJCOM.
- It makes the SPO at ESD responsible for the program for an indefinite period. It does not have a mission for the ALC stated in the PMD.

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

Product Center Interview Response:
- No changes were needed.
- The PMRT plan became obsolete.

ALC Interview Response:
- There are no management systems in place to allow the SPO to operate as a System Program Manager (ALC). This will cause some real problems with support.
- There is no basis for making new agreements until the new policies and procedures are released from the new command. There are daily turf battles. Losing a point of reference.

Test Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- See Engineering

ALC Interview Response:
- See Engineering

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- See Engineering

ALC Interview Response:
- See Engineering

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- See Engineering

ALC Interview Response:
- See Engineering

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your test organization?

Product Center Interview Response:
- See Engineering

ALC Interview Response:
- See Engineering

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Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- See Engineering

ALC Interview Response:
- See Engineering

Investigative Question 6. How has IWSM affected the roles and responsibilities of the test divisions at each location (ALC/PC)?

Product Center Interview Response:
- Some sustaining engineering was integrated into the production qualification test program.
- Some ALC engineers were involved in review test documents and participation in test activities.

ALC Interview Response:
- See question 9 in engineering.
- Between October until April there was some involvement in test activities. Participated in tests.
- Can not afford to support any test activities.

Investigative Question 7. How has IWSM affected the composition of system or subsystem test teams?

Product Center Interview Response:
- There has been some involvement, but very little.

ALC Interview Response:
- For a while was able to add one more person to the test team by participating.
- No longer can support.

Investigative Question 8. How have Test and Evaluation processes (Test and Evaluation Master Plan updates and reviews, Contractor Test Plan/Procedure reviews, etc.) been affected by the IWSM transition?

Product Center Interview Response:
- TEMP was approved; no more need to revise TEMP.

ALC Interview Response:
- For a while was actively involved in these activities.
- Now effort is down to 0%.

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

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Product Center Interview Response:
- The PMD was revised.
- All of the IWSM plans were coordinated with the ALC.
- Part of the FPS-124 program is to establish a depot in Canada. SM-ALC was asked to help in this effort because the Canadians did not have any experience in developing a depot. SM-ALC did not want to help in this effort because they felt that SM-ALC should be the depot. Eventually it was decided to send a product center systems engineer to support efforts. Meanwhile, the SM-ALC and the Canadians agreed to trade one Canadian, who would learn how the ALC worked at McClellan, for one ALC engineer who would help start the depot. Eventually it was decided to trade four or five people. Unfortunately, this proved to be more difficult and has caused the progress to stop. They are currently trying to bring it back down to one person.

ALC Interview Response:
- There was no impact.

Appendix G: Joint-STARS Research Findings

Contracting Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- The toughest thing they had to contend with was that they were given a directive to implement by Jul 92 and very little guidance (seamless organization, one face to the user). As they were finishing their recommendation, new guidance was issued and made them have to start over. The initial coordination was not thought out well enough.
- Able to meet with counter parts at the ALC right away. It was a real education. The ease of communication with the ALC helped. This has helped not only understand ALC counter parts but also caused them to add to some activities to the program.

ALC Interview Response:
- Have not felt any transition on this program.
- There have not been any procedure changes.
- PMRT at least provided a milestone. Now there is not even a milestone, just discussions.
- In the contracting area, there has only been a single one-week meeting. During this meeting they were told that they had an opportunity to shape the organization they would be working in. They "beat their heads" for a week and, "surprisingly" came out with a consolidated plan, which was not easy. The recommendations were disapproved. It was a joke that they had an opportunity to shape the organization.
- This resulted in: no "in-house" practices helped. What they did do was rejected.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- From a contractual basis, none.
- Under original concept of IWSM, Joint-STARS had developed a set of joint regulations which would apply to a true "seamless" organization. It would take into account both AFSC and AFLC regs. Then the direction changed.
- Since then, the new transition plan has all of the acquisition contracting occurring at ESD.
- One change might occur in the future. If there is a block upgrade sometime in the future, the plan calls for ESD to manage the change rather than Warner-Robbins.

- Continue with business as usual.

ALC Interview Response:
- IWSM has been transparent. Have not changed business practices.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- While doing research at the beginning on how to perform the transition there were three sources of help that were particularly helpful:
    -- The HQ AFSC Deputy for Contracting Policy.
    -- The Joint-STARS DPML.
    -- There was cooperation amongst the head of contracts from the three IWSM programs. Particularly in the area of computer automation. One of the three had more experience than the others and shared this experience.

ALC Interview Response:
- Did not have any external expertise.
- There was a professional facilitator at the single meeting that was held. They did help the meeting, but since the recommendation was thrown out, this expertise did not benefit the IWSM implementation effort.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your contracting organization?

Product Center Interview Response:
- Realized there was not an automated capability for data transfer (E-Mail). Established this fairly early. Now communicate through E-Mail on a day to day basis.
- Have engaged in person and in a conference call situation on about a quarterly basis. There has not been a need for much more at this point due to the phase of the program.
- In addition, FAX, telephones, and mail.

ALC Interview Response:
- The same technologies that everyone else mentions: E-Mail, VTCN, telephone, TDYs, and FAX.
- None of these capabilities can come close to the environment that they recommended, which was to co-locate. There is no reason for the two centers to be separate.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- The fact that they did not know what the charter was at the start.
- There was a mind-set at the beginning that there was going to be more integration. It was hard to change back to more of a "business

as usual approach."
- Had looked in a history book at a previous attempt to try this type of integration and it had been turned down. Nobody seemed to be interested in looking at this history to see how it might relate to today's situation.

ALC Interview Response:
- Identifying who they work for between the PEO and DAC chain of commands. For example, who should be sole source selection authority and who should chair the acquisition panel? There are more than enough masters to serve.
- No specific regulations are in place now. They are familiar with the fact that new regulations are in draft now which identify new funding thresholds and approval authorities.

Investigative Question 6. How has IWSM affected the government/contractor relationship with your contractors? How has the transition impacted any of your programs contracts? Any contractual cost/schedule impacts?

Product Center Interview Response:
- Have not been many impacts to the relationship with the contractor due to the program's phase.
- Have not been any impacts to the existing contracts.
- Some of the new contracts or modifications that are being developed are being put together better based upon the IWSM environment. Have learned more about how to help the ALC and are trying to be smarter on how to structure the contract.

ALC Interview Response:
- Due to the phase of the program, the ALC has not established any relationships with the contractor. Therefore, there have been no impacts.
- No contracts have been received from ESD.

Investigative Question 7. How has IWSM changed the use of the Defense Contracting Management Administration Offices (DCMAO)?

Product Center Interview Response:
- Early on there was no talk about bringing the Defense Logistics Agency (DLA) into the talks. Brought DLA into the new regulation review process.
- The DLA organization at their contractor's facility is increasing from 13 to 91 people. This increase is due to issues besides IWSM, but the input from DLA into the process should help them consider the increase.

ALC Interview Response:
- Same response as in question number 6 above. Have not established relationships yet so there is no impact.

Engineering Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices" helped you the most during the transition?

Product Center Interview Response:
- Try harder to melt the two engineering functions. A harder push to combine both into one.
- Rivalries that "exist" and different perceptions exist between commands. The need to be alert to perceptions and sensitivities.
- Began with TQM sessions at Warner-Robbins. An on-site visit to chart processes.

ALC Interview Response:
- The only thing that was really helpful was that it was easier to go TDY. Funding was provided from the SPO.
- It would have been nice if the engineering departments had combined, but they didn't.
- Lost their engineering supervisor, who left government service. Don't know if this was a direct result of IWSM but he left suddenly. Speculated that IWSM may have added additional pressure.
- Wouldn't say that the transition has been smooth at all, especially for the workers.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- Overtly integrated logistical supportability into the work environment. Were never concerned with support issues before; now must consider them.
- Changing engineering, had to essentially use "gorilla" tactics to become part of the process.

ALC Interview Response:
- Lost autonomy. Before IWSM felt comfortable bringing up issues. Now, sometimes, they are told not to worry about certain issues because it is duplication of effort.
- Now more worried about what supervisors might think than before.
- There is more travel than before. This allows them to see things as they happen more. Unfortunately there is so much travel. Seem to be gone about 75% as opposed to 15% before.
- Used to have a more global perspective on the program but now tasked to focus on certain support related issues. Concerned that even though the SPO engineers are taking depot issues into account more than before, they don't have the depot experience and without ALC input many things will still be missed. Efforts on their part to correct this are called duplication of effort.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- The briefings explaining the guidelines.

ALC Interview Response:
- None.
- Basically told not to participate in the Engineering/Configuration Management PATs from the ALC management. Believe that this was based upon TDY funding issues. Had attended two meetings but when the funding issues came up, they stopped attending.
- If they had participated in an active way, they believe that they would have been helpful.
- Was able to interact with other IWSM programs at WR-ALC. However, Joint-STARS was ahead of the other programs so there was very little that was gained. There may have been some cross-flow from Joint-STARS to the other programs.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your engineering organization?

Product Center Interview Response:
- Placed engineering on E-mail distribution.
- Increased correspondence by letters and reports.
- Try to let them know "real-time."
- Communicate informally via phone as well as formally.
- Weekly activity report to Warner-Robbins.
- Had an engineering "home-day" at Hanscom AFB to explain the purpose of each function "face-to-face."
- Incorporated a VAX cluster so there was no dependence on the DSN; improves speed.
- Increased the use of FAXs.

ALC Interview Response:
- The best thing was the installation of an E-Mail system. The SPO invested a lot of money in these computers.
- In the process of installing a VTC network.
- Increased travel has helped communication.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Lack of knowledge of what "other" engineers are doing.
- Suspicion of moves; is "Mass. taking over Georgia" or vice versa?
- How is the structure going to change?

ALC Interview Response:
- SPO engineering still ignores the ALC inputs/concerns. Feel that ALC engineering opinions do not receive the same weight or respect as the SPO engineers. However, there does seem to be more attention

than before IWSM.
- Trying to merge the cultures; acquisition is more schedule driven; a lot of them don't want to bother with us.

Investigative Question 6. How will the merger affect the working relationship between a weapon system program office and its associated commodities program offices?

Product Center Interview Response:
- Do not deal with commodities at Hanscom.
- Melbourne, Florida is now into the loop, as well as, ASD.

ALC Interview Response:
- They are still the same. There will have to be more changes in the cultures before any change.
- No commodity programs.

Investigative Question 7. To what extent has the merger increased the involvement of Air Logistics Center (ALC) Quality Assurance engineers into Design/Development activities?

Product Center Interview Response:

- Increased a lot but limited by number of people.
- Recent implementation so its difficult to gauge the results.
- Engineering involvement is trying to be part of engineering rather come in on the end item.

ALC Interview Response:
- There is more involvement than before. There is some effect on development issues. But it is a hard process.
- An example was provided. Two months ago provided 30 comments to a specification. Still trying to get 18 of those comments incorporated. They have responded to comments but have not incorporated them yet.
- Able to provide more input than before but still not considered on par with the SPO engineers.
- Concerned that there may be an attitude that the ALC engineers are not as qualified as the SPO engineers.

Investigative Question 8. How has the merger affected the membership of the Configuration Control Board? How has it affected the manner in which the CCB is conducted?

Product Center Interview Response:
- Hasn't affected the CCB as of today.
- Now represent Warner-Robbins on the CCB.

ALC Interview Response:
- Has not affected the membership.
- ALC engineers have less input in the CCB than before. Before IWSM there was an opportunity provided to make comments which would be considered at CCB. Now no longer asked to provide these comments.

Investigative Question 9. What are the roles and responsibilities of the engineering function for your program at each center (ALC/Product Center (PC); please respond regarding both locations)?

Product Center Interview Response:
- JPO engineering is lead engineering organization.
- At the ALC the roles and responsibilities are evolving. There is an insistence on software expertise in areas of documentation for follow-on support.

ALC Interview Response:
- The roles are the same. They (the SPO) are responsible for the whole system. ALC engineers are responsible for the same thing, however, they do not have enough manpower (only 5 engineers).
- One thing that is different. At the ALC they are all government engineers. At the SPO the engineers are 90-95% contractor engineers. They will tell you that they are not responsible, they are only advisors.

Financial Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- It was very slow getting answers to questions. Maybe they (staff) didn't know either.
- There was no roadmap at the beginning. They had to work it out together.
- IWSM was not as significant to this program because PMRT was not scheduled until 1997.
- There was a culture shock due to the documentation differences between the two commands.

ALC Interview Response:
- No Financial Manager could be identified.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- No real changes in the way they do business due to the phase of the program.
- There are some administrative changes.
- DBOF influences make it more difficult to understand how IWSM is changing financial management.

ALC Interview Response:
- No Financial Manager could be identified.

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<u>Investigative Question 3</u>. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- In general, there was none.
- At first, sent people to Warner-Robbins and locked them in a room for one week and had them produce an organization chart, develop answers, and elevate issues.
- They did use TQM training and facilitators.

ALC Interview Response:
- No Financial Manager could be identified.

<u>Investigative Question 4</u>. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your financial management organization?

Product Center Interview Response:
- The implementation of a VAX system which linked the two locations allows them to share Weekly Activity Reports (WARs).
- Still working to improve to allow automation of more funding documents.
- E-mail and FAXs.

ALC Interview Response:
- No Financial Manager could be identified.

<u>Investigative Question 5</u>. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- The only real stumbling block was determining where the organizations would be; location.
- There was initial concern over jobs. After the first couple of days they saw a barrier come down as they learned that this would not be a concern.
- Some frustration on slow / no responses to IWSM issues.
- Crazy FAXs seemed to come down from the staff. When they asked questions to the PATs, they seemed to be answered by more questions. It seemed that nobody knew the answers and that there was a fear of developing the wrong answer.
- AFMC staff seemed to want information but had little to provide in return. "Corporation decisions" have been slow.

ALC Interview Response:
- No Financial Manager could be identified.

<u>Investigative Question 6</u>. What interim procedures have you used to manage program funding during the IWSM transition until a final solution is found to the "Total Program Funding" issue?

Product Center Interview Response:
- Not Applicable because of Total Package Funding. This has not

made an affect yet, but will in 1993.
- Right now have to treat the ALC as a customer.
- Decisions still have to be made on budget authority.
- Joint-STARS is an experimental case. They will be getting money specially coded for initial spares at the SPO.

ALC Interview Response:
- No Financial Manager could be identified.

Investigative Question 7. Describe the problems (and their solutions) you have encountered regarding the applications of 3600, 30XX, 3400, or other appropriations during the IWSM transition.

Product Center Interview Response:
- Has not been an issue yet. The ALC has had some problems spending 3600 funds.
- Found that the ALC suddenly needed funding supplied because they were not included in the ALC funding exercise.
- As the learning curve develops, some things do fall through the cracks. The cultures need to merge.

ALC Interview Response:
- No Financial Manager could be identified.

Investigative Question 8. How has the merger affected the reporting of manpower costs? (against program vs. against Product Division/ALC?)

Product Center Interview Response:
- This was a big question at the start. They were told to take manpower out of IWSM numbers. There has been no impact to date.

ALC Interview Response:
- No Financial Manager could be identified.

Management Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- Hardest part of the IWSM transition was trying to figure out what the organization was supposed to look like when they were done.
- The senior leadership had trouble articulating what they were after.
- It would have helped to have had more concrete goals.
- Joint-STARS was in a unique position in that they were in the middle of the Engineering Manufacturing Development phase. The ALC only had two full time people assigned to the program and they were concerned with logistics.

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ALC Interview Response:
- If asked six months ago, would have said to change the whole thing.
- There was a lot of confusion. Very disjointed. Every time the PATs or program directors briefed, the rules changed and they had to start over.
- It appeared that policies and procedures were being established as they went along.
- To make it easier or smoother they should have appointed the test programs and then incorporated them into the PATs and established the policies and procedures before having them incorporated into the organizations. Acknowledged that they were probably under a time constraint.
- Some ALC people have been waiting a long time for substantial changes to the acquisition process. They have felt like "the tail on the dog." The best in-house practice was the determination to make IWSM work and to not allow any barriers.
- The SPO and IWSM got together early to discuss the processes of each organization for two or three days. It opened a lot of eyes.
- Two weeks later there was a "full-blown" facilitated meeting outlining the goals and objectives of IWSM. This worked well.

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

Product Center Interview Response:
- Have in fact changed the way they do business.
- Prior to IWSM had started to implement Integrated Product Team approach in which the Government and the contractor work more closely.
- The relationship with the ALC is now closer. The chief of logistics at the Product Center now leads the program people at the ALC. On 1 July 92 the lead at the ALC will report to the chief at the Product Center. The logistics chief will be writing performance reports as the reporting official. The appraisal will then reenter the ALC chain. There have been some problems for the lead at the ALC "serving two masters" but these are being worked out. There are now about 20 people at the ALC on the Joint-STARS program.
- Some working groups have been moved to the ALC: Depot Maintenance Activation Working Group. (Had previously been managed at Product Center)
- Two IPT teams are lead at the ALC: Aircraft Support team and the Prime Mission Support team.
- People working on depot support at either location now report through the chief of depot support at the ALC.
- When asked if the "Rich Uncle Syndrome" was in effect at the ALC, answered yes and perhaps it should. The ALC people are a part of the organization and Joint-STARS expects to have to feed them.

ALC Interview Response:
- Totally.
- They way they do business now is as a part of the team. Before

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the ALC acted as a policeman. They checked everything that the SPO did to make sure that support issues are being addressed.
- Now using the Integrated Product Team approach. Now the SPO and the ALC are partners in acquiring the depot activation capabilities.
- The group must express concerns now.

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- The only thing that helped at all was some TQM facilitation. A two week joint meeting was held at Robbins AFB where this facilitation was provided.
- During this meeting, people were able to learn how they all provided to the "big picture."

ALC Interview Response:
- Did struggle at the beginning. Eventually slowed down some to let the other programs catch up.
- One source of guidance came from the Joint-STARS DPML. He was at school at DSMC and had a computer with him. If there were problems, he would go over to the Pentagon and seek guidance. This did help.
- Tried to keep up with the IWSM issues board to see what problems other programs had.

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your management organization?

Product Center Interview Response:
- Sent a huge TDY budget to the ALC.
- VTC is being procured and established.
- Joint-STARS has established its own VAX system with a high speed data link between the Product Center and the ALC. This works so well that the manager can sit on the phone during a briefing and see the slides on his computer in his office.
- Tries to visit ALC at least once a month and they will visit the Program Center once a month.
- They like to brag that "if you close the windows, you can't tell which center you are at."

ALC Interview Response:
- Installed computers to establish direct E-Mail with the SPO. This was a great help.
- In the process of installing a VTC system. This will save a lot of TDY time.
- Will soon have access to the SPO/contractor data base. The data base keeps life-cycle cost data, FRACAS data, provisioning data, and much more. The system needs an upgrade to allow more users to access it before WR-ALC can have access from Warner-Robbins.

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- Trying to understand what the senior leadership was looking for.
- One of the early plans was to move the entire organization to the ALC.
- Financial Management transition has been particularly difficult. Sorting out how to manage stock funds and initial spares money has been confusing for the single manager.
- Adding to the confusion by IWSM has been the changes to the rest of the Air Force: the creation of Air Combat Command, DBOF.
- Doing it all at once is difficult.

ALC Interview Response:
- The hurdles still exist. There is still a reliance on other organizations at the ALC (Provisioning, Technical Order division, Funding, Contracts, etc) who are not involved in IWSM. It is very difficult to make some of these people understand how Joint-STARS is operating and to get them to work under an IWSM process.
- It seems that they understand when you tell them, but they seem to have trouble believing it and applying the new processes.
- The videos put out by AFMC (P) were put out too late. They explained issues that Joint-STARS had already passed.
- The merger of TAC and SAC has caused a greater disturbance to some of the ALC personnel than IWSM has. Many of them are concerned over whether they will still be talking to Offut or Langley.

Investigative Question 6. How has IWSM affected the management of your Program Objective Memorandum (POM):
   a) 92-94 POM years
   b) 94--> POM years

Product Center Interview Response:
- IWSM has not effected POM management. DBOF has.
- Joint-STARS was selected to implement the Total Funding experiment. When the program was turned over to the Product Center they inherited responsibility for buying infrastructure equipment (trucks, sheet metal machinery, etc). Nobody had ever funded for this.
- In theory, the manager is responsible for knowing where all the Joint-STARS money is and be able to move it around. One problem with this is that it is very difficult to locate all of the money.
- When you start IWSM, you sign up to unfunded requirements.
- They spent time last summer helping TAC reorganize the POM. The product center now cares whether or not TAC budgets for spares.

ALC Interview Response:
- DBOF has caused some disturbance. They are coming up with questions that management does not have answers for.
- The POM was greatly affected because the SPO is now responsible for funds that they haven't seen before (support equipment, ALC O&M). This puts all of these funds in one place and creates a clearer picture. People will find the combination shocking because they will seem so big.

- Worked the POM directly with the SPO. When the ALC financial management people were putting their POM together they asked for inputs. Initially they told the ALC FM people that they had already made their submissions. Then they discovered that the SPO POM had not included expendables in their submissions and was not prepared to submit this. This was then included in the ALC POM. By next year this will be worked out.

Investigative Question 7. What are the roles and responsibilities of a Single Manager?

Product Center Interview Response:
- Clearly everything.
- Really believes he is responsible for support.
- May have oversold ourselves on the sound life cycle management business decisions that the single manager will make because no one manager will really be there over the whole life cycle. The business is still focused on short term because crises still demand most of your time. Still required to make short term decisions.

ALC Interview Response:
- Glad to see the single manager concept come out. It is important for the users. Some people think that now they will just call Col or General "so and so." This will not happen. They will still call the workers, but now they will be coordinated better as a team.
- The single manager must establish a base of people who can manage the program. No one person can manage it themselves. The user should have a person to call (working level) without going through multiple level of bureaucracy.
- The single manager must channel the right effort at the right tasks to avoid duplication of effort.

Investigative Question 8. How has the IWSM transition affected management of the Program Management Directive (PMD)? Has the PMD been updated since the transition? In what ways has it been updated?

Product Center Interview Response:
- There has always only been one PMD.
- It has been updated. The changes have been things like inserting "AFMC after 1 Jul 92." The simplicity of the changes probably has to do with where Joint-STARS is in the Life Cycle.

ALC Interview Response:
- The PMD has been updated.
- In order to implement the test program and the CONOPS they needed the PMD updated. The update also reflect some of the funding changes. It also incorporated direction to work the Total Program Fielding issues.
- There was no input from the ALC. However, was comfortable with the representation provided by the DPML.

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement,

International Agreements, etc.) with other organizations due to the IWSM transition?

Product Center Interview Response:
- Haven't changed a thing with the Army.
- There is a very short MOA between the PEO and the ALC commander which states that the ALC will continue to support Joint-STARS. This had to do with being a PEO program.

ALC Interview Response:
- Didn't have any adjustments to MOAs.
- In the process of developing an MOA with the Army. Before IWSM, it would have been signed by AFLC, now it will be signed by the Joint-STARS DPML and an Army colonel.
- Have had to develop new MOAs and LOAs between the ALC and the SPO at the start. These were signed at the program director level and one-star levels. These agreements outlined the types of services which would be provided by the larger ALC organization to Joint-STARS. For example, it was agreed that the ALC would provide contracting support for depot activation.
- The agreements were signed at the higher level (one-star level) due to the manpower issues. They had to outline who reported to who.

Test Findings.

Investigative Question 1. Knowing what you now know about the IWSM transition, if you could change something that would have made the transition easier/smoother, what would you have changed? What "in-house" practices helped you the most during the transition?

Product Center Interview Response:
- The only thing they would change was "getting into" it. There had been some planning at the staff level early on. Unfortunately, it was all dumped on SPO members at about four o'clock on a Tuesday afternoon and they were told to be on a plane the following day to make an IWSM meeting. This did not give SPO members a chance to prepare before things got started.
- After the start, the whole thing (the first meeting) was almost inspirational. Had never seen management principles lifted from a text book and applied. Came away from the meetings knowing that good things were going to come from this.
- Would change nothing from this point on.
- Took a laptop computer to the meeting and communicated each days events back to the SPO. This also brought input from the office back into the meeting.

ALC Interview Response:
- SEE ENGINEERING

Investigative Question 2. One of the original goals of IWSM was to "change the way we do business." In what ways have your business practices changed?

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Product Center Interview Response:
- All three of the main tenets (seamless, one-face, cradle-to-grave) have occurred in the test arena.
- The hardest part was coming to understand and accept that not very much needed to be done.
- Have integrated the two test organizations. The test people at the ALC now report, functionally, to the ESD test people.
- One of the things that came out of the IWSM process; there has been incorporation of the Integrated Product Team management approach. This is not just a token organization chart.

ALC Interview Response:
- SEE ENGINEERING

Investigative Question 3. What guidance and external expertise truly benefitted your IWSM implementation effort?

Product Center Interview Response:
- The facilitators at the initial meeting really made a difference. Without their assistance, the meeting would have become a "get acquainted" session. They were able to focus attention on the goals and keep things going. It was impressive. Would recommend their assistance.
- TQM training was later provided.

ALC Interview Response:
- SEE ENGINEERING

Investigative Question 4. What specific strategy(ies) have been established to enhance communication/control with the geographically separated part of your test organization?

Product Center Interview Response:
- Have established the computer network down at Warner-Robbins. It was a top priority project and it has helped. The network was established in about two or three months.
- There has not really been an increase in phone or FAX usage. There is not really a designated test person assigned at the ALC yet. It is covered by engineering.
- Connectivity and communicating to keep in touch.

ALC Interview Response:
- SEE ENGINEERING

Investigative Question 5. What were the major "hurdles" that you encountered during the IWSM transition?

Product Center Interview Response:
- It took a couple of hours to realize that there were no integration problems in the test area.
- Initially, there was a notion among the group that the entire SPO was going to move down to the ALC. There was no explanation as to why they would do this. The decision was eventually changed.

ALC Interview Response:
- Told that ALC engineers could no longer participate in testing. Told that it would be duplication of effort. Before IWSM ALC engineers used the tests as opportunities to become more familiar with the systems in anticipation of eventually assuming responsibility for them. Formal Qualification Tests were like informal training sessions.

Investigative Question 6. How has IWSM affected the roles and responsibilities of the test divisions at each location (ALC/PC)?

Product Center Interview Response:
- There has not been a change. Testing is still performed only by SPO personnel. This is based upon the maturity level of the program.

ALC Interview Response:
- No true responsibilities for testing.
- There is some development on Test Pattern Set (TPS) testing by another division at the ALC.

Investigative Question 7. How has IWSM affected the composition of system or subsystem test teams?

Product Center Interview Response:
- Same as number six above.

ALC Interview Response:
- Loss of autonomy.
- Again, the ALC does not go to the tests that they once did.

Investigative Question 8. How have Test and Evaluation processes (Test and Evaluation Master Plan updates and reviews, Contractor Test Plan/Procedure reviews, etc.) been affected by the IWSM transition?

Product Center Interview Response:
- Nothing has changed. Warner-Robbins would review these documents and they still do.

ALC Interview Response:
- Overall, the SPO seems to be more serious about their review. They seem to be more concerned about support issues.
- As an example, there has been an engineer at the ALC who has been complaining for a long time that there are support problems with the software. Now the SPO is paying more attention. "They are starting to sound more like us."

Investigative Question 9. What types of adjustments have been required to agreements (Letters of Agreement, Memorandums of Agreement, International Agreements, etc.) with other organizations due to the IWSM transition?

Product Center Interview Response:
- No changes have been required due to IWSM.

ALC Interview Response:
- There has been the development of one MOA regarding the TPS development between the Joint-STARS ALC office and the division managing the TPS. Don't know if this had any relation to IWSM.

Bibliography

Abrams, Col Fredrick L. Comments recorded on *Integrated Weapon System Management*, #611289 DF (1991), Aerospace Audiovisual Services (MAC) (Videotape).

"AFMC IWSM Process Development Roadmap II," HQ AFLC/XRT, Wright-Patterson AFB OH, 22 November 1991.

Babbitt, Bettina A. and Charles O. Nystrom. <u>Questionnaire Construction Manual,</u> Research Product 89-20, June 1989.

Bingham, Walter Van Dyke *et al.* <u>How To Interview</u>. New York: Harper and Brothers, 1959.

Blumenthal, Barbara B., PhD. *The Acquisition of Small High Technology Firms: A Study of Merger Implementation.* PhD dissertation. University of Michigan, Ann Arbor MI, 1989 (DA9001602).

Bond, David F. "USAF to Integrate Systems, Logistics Commands Into 'Cradle to Grave' Materiel Organization," *Aviation Week and Space Technology, 134 no. 2:* 26 (14 January 1991).

Brenner, Michael *et al.* <u>The Research Interview: Uses and Approaches.</u> Orlando: Academic Press, 1985.

Bruce, Leigh. "Strained Alliances." *International Management (UK) (Europe Edition), 45 no. 4:* 28-34 (May 1990).

Chakrabarti, Alok K. "Organizational Factors in Post-Acquisition Performance," *IEEE Transactions on Engineering Management, 37 no. 4:* 259-268 (November 1990).

"Change is Opportunity," *Leading Edge, 33:* 4 (January 1991).

Daniell, Mark. "Webs We Weave," *Management Today (UK),* February 1990: 81-86.

Datta, Deepak K. and Po L. Yu. "Corporate Acquisitions: The Merging of Habitual Domains," *Human Systems Management, 10 no. 1:* 47-60 (1991).

Dodgen, Loretta Pate, EdD. *The Integration of Acquisitions and Mergers: An Interpretive Inquiry.* EdD dissertation. University of North Carolina, Greensboro NC, 1991 (DA9204431).

Elliot, Capt Deborah A.. *The Effect of Defense Management Review Decision 904, Stock Funding Depot Level Reparables, on Cash Flow Within the Reparable Support Division of the Air Force Stock Fund.* MS thesis, AFIT/GLM/LSM/91S-18. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1991.

Emmelhainz, Lt Col Larry W. "TQM Principles and Measures: Key to Successful Implementation," *Air Force Journal of Logistics, 15 no. 3:* 34-37 (Summer 1991).

Emory, William C. and Donald R. Cooper. Business Research Methods, Fourth Edition. Boston: Richard D. Irwin Inc, 1991.

Glossary: Acquisition Management Acronyms and Terms. Department of Defense Systems Management College, 1985.

Goddard, Capt Richard, Integrated Weapon System Management Program Office. Telephone Interview. Air Force Materiel Command, Wright-Patterson AFB OH, 20 July 1992.

Hitt, Michael A. and Beverly B. Tyler. "Strategic Decision Models: Integrating Different Perspectives," *Strategic Management Journal, 12 no. 5:* 327-351 (July 1991).

Kahn, Robert Louis and Charles F. Cannell. The Dynamics of Interviewing: Theory, Techniques, and Cases. New York: Wiley, 1957.

Malekzadeh, Ali R. and Afsaneh Nahavandi. "Making Mergers Work by Managing Cultures," *Journal of Business Strategy, 11:* 55-57 (May/June 1990).

"Materiel Command, Air Force Integrates Systems, Logistics," *Leading Edge, 33:* 3 (January 1991).

Mauger, Betty Anne. "The I-Team," *Leading Edge, 33:* 3 (March 1991)

McDonald, Gen Charles C. and Gen Ronald W. Yates. Memorandum of Agreement between Air Force Logistics Command and Air Force Systems Command. Wright-Patterson AFB OH and Andrews AFB Washington DC, 25 June 1991.

"One Face," *Leading Edge, 33:* 12 (October 1991).

"Organizations," *Air Force Magazine,* May 1991: 71-79.

Pansza, Anthony, Chairman, IWSM Implementation Plans Working Group. Personal Interview. Air Force Logistics Command, Wright-Patterson AFB OH, 4 December 1991.

Peluchette, Joy van Eck and Arkalgud Ramaprasad. "The Human Dimension of Mergers and Acquisitions," Report to the 1990 National Decision Sciences Institute Meeting. San Francisco, CA, 1990.

Power, D. "Acquisition Decision Making," *Mergers and Acquisitions, 18 no. 2:* 63-64 (1983).

Rao, Vithala R. *et al.* "A Balance Model for Evaluating Firms for Acquisition," *Management Science, 37 no. 3:* 331-349 (March 1991).

Rowland, Lt Col Edward and Dyke McCarty, "The Acquisition of Major Systems," _SMGT 643, System Acquisition Management,_ Air Force Institute of Technology, Fall Quarter 1991.

Scescke Slama, Patricia, Ed.D. *Developing Human Resources During Organizational Transition: An Inductive Case Study of a Corporate Acquisition.* Ed.D dissertation. Northern Illinois University, IL, (DA9214470).

Schniederjans, Marc J. and Karen L. Fowler. "Strategic Acquisition Management: A Multi-Objective Synergistic Approach," *Journal of the Operational Research Society (UK), 40 no. 4:* 333-345 (April 1989).

"Searock," *Leading Edge, 33:* 4 (November 1991).

Searock, Lt Gen Charles J. Jr. Comments recorded on *Integrated Weapon System Management*, #611289 DF (1991), Aerospace Audiovisual Services (MAC) (Videotape).

Shelton, Capt William. Personal Correspondence. F-16 Program Office, Aeronautical Systems Center, Wright-Patterson AFB OH, 25 April 1992.

Stratford, Capt Jim. "IWSM: Initial Programs Will Develop 'Cradle-to-Grave' Idea," *Leading Edge, 33:* 4-5 (May 1991).

Teal, Lt Gen David J. Comments recorded on *Integrated Weapon System Management,* #611289 DF (1991), Aerospace Audiovisual Services (MAC) (Videotape).

Termena, Bernard J *et al.* Logistics: An Illustrated History of AFLC and its Antecedents, 1921-1981. Wright-Patterson Air Force Base: Office of History, Headquarters, Air Force Logistics Command, 1981.

Willett, Stephen Donald, PhD. *The Success Factor in Acquisitions: Human Resources.* PhD dissertation. The Union Institute, OH, 1990 (DA9033554).

Yates, Gen Ronald W. Briefing at Hanscom AFB MA, 20 August 1991.

Yin, Robert K. *Case Study Research; Design and Methods.* Sage Publications Inc., 1984.

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<u>Vita</u>

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13. ABSTRACT *(Maximum 200 words)* This thesis investigated Integrated Weapon System Management implementation issues. Five functional areas were examined: Contracting, Engineering, Financial Management, Program Management, and Test Management. Data was collected through interviews. The most significant lessons learned were to establish a direct chain of command and to use TQM principles. Program business practices were changed by increasing Product Center/ALC interaction and implementing a single joint CCB. Program personnel obtained useful guidance from other IWSM programs and from the information products distributed by HQ AFMC. Communication improvements included increased teleconference capability and establishment of a Local Area Network. Cultural differences between centers, insufficient initial guidance, and "rice bowl" mentalities were the most significant hurdles encountered. An examination of specific functional areas revealed that: Contracting officers may expect opportunities to improve contract management; financial managers need to provide increased funding visibility to the single manager; and program managers should expect to change their approach to system life-cycle management.

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